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NESTING BIRDS OF LAKE COUNTY, OREGON

(With Special Reference to Warner Valley)

BY DR. A. G. PRILL, SCIO, OREGON

Lake County, Oregon, as its name implies, is a county of lakes, but this article has special reference to that portion of the county known as Warner Valley.

Warner Valley lies in the southeastern portion of Lake county and contains a series of lakes known as Warner Lakes.

The territory covered in my investigations of the bird life of this section comprises the valley from a few miles north of Plush to the lower or south end, a distance of some 36 miles.

The valley proper is from five to eight miles wide and covering about 180 square miles.

In this valley, beginning at the north, are found the following lakes: Hart, Crump, Pelican, Dodson, Greeser, and Alkali Lakes.

All are freshwater lakes, except Alkali, and are fed by Honey Creek at Plush, Deep Creek at Adel, and Twenty Mile Creek in the southwest corner.

The major portion of the entire valley is flooded in the early season by irrigation ditches, to mature the crop of wild hay.

Scattered over this tract are many portions of land above high water mark. Several of the lakes contain islands. Surrounding these lakes are large patches of tules and flags and outside of such areas are found the wild grass meadows.

The general elevation of the valley is 4500 feet.

On the west side of the valley are high mountain ranges, known as the Warner Rim, and on the south and east, equally as high ranges, elevations up to 6500 feet, and on top of these ranges are found the table lands.

The mountains and table lands are covered with sage brush and greasewood, with scattering trees of Juniper.

The low lands along the streams have dense growths of Cottonwood, Willows, Junipers, Choke Cherry, Wild Plum trees and some Wild Rose bushes.

The farming lands, which are all irrigated, have large groves of Poplar trees, fruit orchards, alfalfa fields and gardens.

Along all the irrigation ditches are found dense growths of willow trees and bushes.

The various descriptions heretofore given will be referred to under separate headings of the many birds found breeding in this valley.

My observations covered a period from May 20 to June 20, 1922, being the height of the breeding season during this year.

While nests of all the species listed were not located there is no doubt of their nesting, as the birds were mated, and were observed during my stay.

Nearly all the lakes contain fish and vegetation, suitable for food for the many wading and water fowl which annually come here to nest.

It was observed that the various species selected breeding grounds quite separate and apart. For example, the Greebes were found on the west side of the lake, the Gulls, Terns and Pelicans on the east side.

The Redhead Ducks were found only in one portion of the valley.

Reference to the map which accompanies this article will further make clear this point.

1. Western Grebe—*Æchmophorus occidentalis.*

Not common. Four pair on Crump Lake and three pair on Hart Lake. Not seen in other parts of the valley.

4. American Eared Grebe—*Colymbus nigricollis californicus.*

Very common on Hart and Crump Lakes. Nesting in the tules bordering on the lakes. Nests of tules floating on water, four to six eggs.

6. Pied-billed Grebe—*Podilymbus podicipes.*

One pair found on Pelican Lake. Would appear to be a rare nesting bird here.

54. Ring-billed Gull—*Larus delawarensis.*

Very common. Nesting on island in the east part of Crump Lake; 500 nests on one island and 85 nests on another island. Ninety per cent of nests contained young June 11. Two and three eggs in sets.

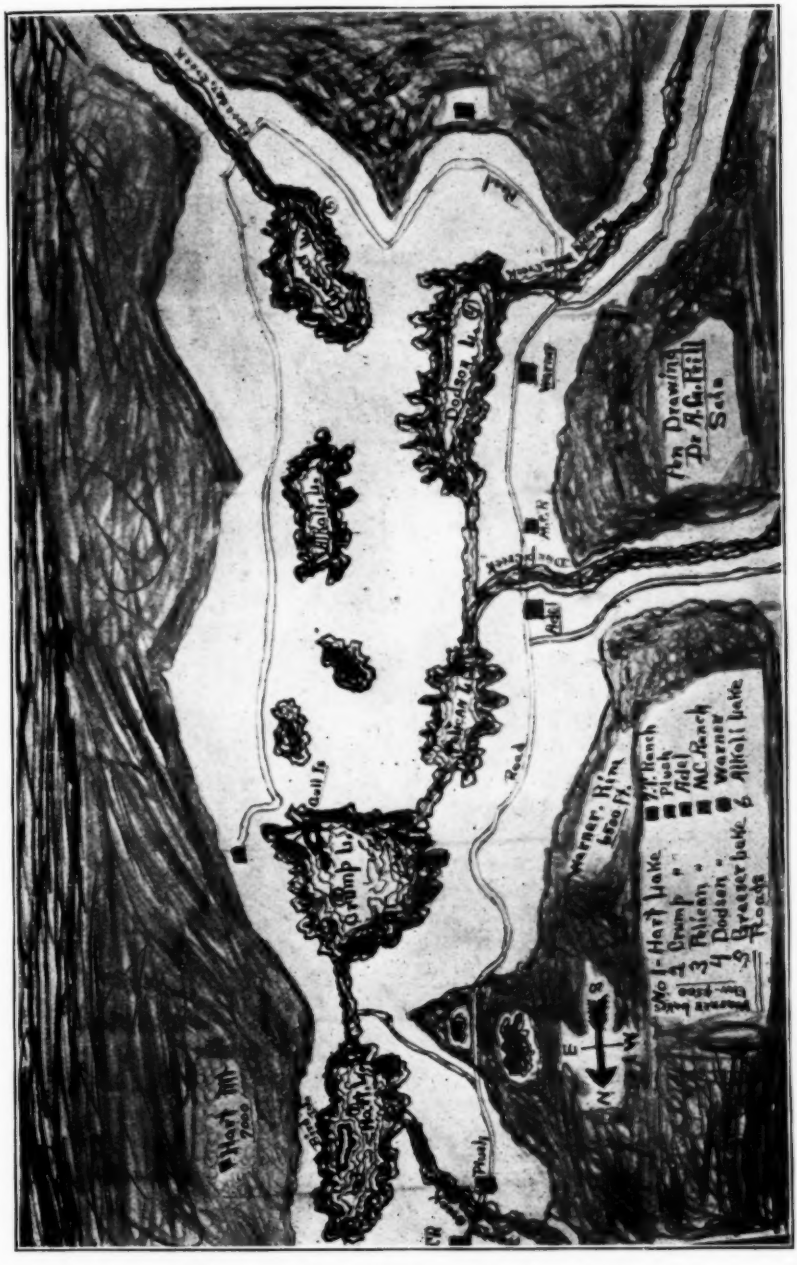
64. Caspian Tern—*Sterna caspia.*

Not common. Twenty-five pair nesting in colony on island in Crump Lake. Complete sets by June 11. Nesting with the Ring-billed Gulls. One, two, three eggs in set.

69. Forster's Tern—*Sterna forsteri.*

Nesting on island in Crump Lake; separate and apart from other birds. Nest very compact, made of flags and grass, raised four or five inches from ground. Three eggs in set June 11.

77. Black Tern—*Hydrochelidon nigra surinamensis.*



Map of Warner Valley and Lakes, 1922

Not common. Some 25 pair nesting near the eastern border of Crump Lake. Eggs two and three in sets June 11.

120c. FARALLONE CORMORANT—*Phalacrocorax dilophus albociliatus.*

Not common. A dozen pair nesting on Bird island, Hart Lake. Three and four eggs June 5. Nest on the ground made of tule and flags.

125. AMERICAN WHITE PELICAN—*Pelecanus erythrorhynchos.*

Not abundant. Twenty-five pair seen in the valley. Nesting on Bird island, Hart Lake, and Gull island, Crump Lake. One and two eggs June 11.

Typical Nest and Eggs of Forster's Tern

129. A129. AMERICAN MERGANSER—*Mergus americanus.*

One pair seen on Crump Lake June 5.

131. HOODED MERGANSER—*Lophodytes cucullatus.*

One pair seen on Crump Lake and one pair on Dodson Lake June 1.

132. MALLARD—*Anas boschas.*

One of the most abundant ducks nesting in the valley. Nesting in the marshes, also on Deep Creek, Honey Creek, Twenty Mile Creek and on the rocky side of Warner Rim, under sage brush. Eggs 7 to 15, May 25 to June 10.

135. GADWALL—*Chaulelasmus streperus.*

Very common. Found nesting in the tule marshes around the lakes.

Sets May 23 to June 15, six to eleven eggs. Nests made of tules, sometimes floating on the water.

156. BALDPATE—*Mareca americana.*

Only three pair seen in the valley. These birds were mated and without doubt getting ready to nest.

140. BLUE-WINGED TEAL—*Querquedula discors.*

One pair seen and one nest found with eggs May 25. Not common.

141. CINNAMON TEAL—*Querquedula cyanoptera.*

Common, and found nesting throughout the valley on small grass islands above high water mark. Nesting June 10. Sets seven to ten.

142. SHOVELLER—*Spatula clypeata.*

Not common, but at least a dozen pair seen in the valley. Mated and nesting June 1.

143. PINTAIL—*Dafila acuta.*

Not over six pair seen in the valley. One nest on Deep Creek. Eleven eggs, June 15.

146. REDHEAD—*Marila americana.*

Quite a common duck. Found nesting on islands near Pelican Lake. June 10. Sets eight to 10 eggs.

147. CANVAS-BACK—*Marila valisineria.*

One of the rarer specie found in the valley, and only three pair seen mated June 5.

167. RUDDY DUCK—*Erismatura jamaicensis.*

Several mated pairs seen in Pelican and Crump Lakes June 5.

172. CANADA GOOSE—*Branta canadensis canadensis.*

At least 25 pair nesting in valley. Canada Geese with young seen June 1. Set two eggs on Bird island. Incubation half on June 5.

187. WHITE-FACED GLOSSY IBIS—*Plegadis guarauna.*

Three pair seen June 1 on the eastern border of Crump Lake.

190. AMERICAN BITTERN—*Botaurus lentiginosus.*

Very common, and could be heard in all parts of the marshes in the valley. Would estimate at least 100 pair nesting. Sets May 25 to June 10, three to four eggs. Nest built in the tules some eight or ten inches above water.

194. GREAT BLUE HERON—*Ardea herodias herodias.*

Very common, probably 25 pair nesting. Colony near Dodson Lake of eight nests built in the top of willow bushes fifteen feet high. Nest on Bird island were on the ground and made of tules. Sets two to six, May 24.

202. BLACK-CROWNED NIGHT HERON—*Nycticorax nycticorax nævius.*

Not common. But twelve pair observed in the valley.

206. SANDHILL CRANE—*Grus canadensis mexicana.*

Seen in all portions of the valley. Ten pair nesting, about one pair to every eighteen square miles of marsh land. Nest with eggs, May 20 to 30. Nest with young birds, June 6. Nesting far out in the marshes.

214. SORA—*Porzana carolina.*

Several pair seen near Dodson Lake, and were no doubt getting ready to nest.

221. AMERICAN COOT—*Fulica americana.*

Very common in all the tule marshes and flags. Sets 7 to 10. Dates, May 28 to June 30. Many not complete sets on later dates.

223. NORTHERN PHALAROPE—*Phalaropus lobatus.*

Three pair mated seen near marshes of Dodson Lake and their actions would indicate nesting June 1.

224. WILSON'S PHALAROPE—*Steganopus tricolor.*

Quite a number of pairs seen near Dodson Lake, all being mated, and without doubt getting ready to nest June 1.

225. AMERICAN AVOCET—*Recurvirostra americana.*

A common nesting bird of the valley. Preferring small alkali island in the marshes. Nests of tules, flags and grass raised some three inches from ground. Eggs 4. Sets May 30 to June 10.

230. WILSON'S SNIPE—*Gallinago delicata.*

Several birds in pairs seen in the south end of valley in the meadow lands.

263. SPOTTED SANDPIPER—*Actitis macularia.*

Several pairs nesting on Deep Creek, Honey and Twenty Mile Creeks. Nest near streams, made of dried grass. Eggs four, June 4.

264. LONG-BILLED CURLEW—*Numenius americanus.*

Two pairs of birds seen in the valley. Nest of four eggs found June 6. Built on dry knoll covered with wild grass made of dry grass. Returning next day to lake. Photo of nest and eggs. Found the birds in much excitement, with two crows near. On reaching nest found eggs had been carried off by the crows.

273. KILLDEER—*Oxyechus vociferus.*

Very common along the streams and borders of the lakes where open dry ground could be found.

294. CARLIFORNIA PARTRIDGE—*Lophortyx californica.*

Very common. Many pairs seen along Deep, Honey and Twenty Mile Creeks. Just beginning to nest June 10.

309. SAGE GROUSE—*Centrocercus urophasianus.*

Very abundant on the table lands of Warner Rim and on the Sage Brush Mountain, east of the valley. Nearly all had young birds by June 1.

316. WESTERN MOURNING DOVE—*Zenaidura macroura marginella.*

One of the most common and numerous birds of the valley. From six to fifteen pair found near each ranch house. Over fifty pair nesting along Deep Creek for a distance of one mile. Nests low down in willow and cottonwood trees. Eggs two, May 20 to June 10.

325. TURKEY VULTURE—*Cathartes aura septentrionalis.*

Very common bird in the valley nesting on the rocky cliffs of Warner Rim.

331. MARSH HAWK—*Circus hudsonius.*

Several pair seen in the valley nesting in the tules. All had young May 25.

322. SHARP-SHINNED HAWK—*Accipiter velox.*

One pair seen on Deep Creek near marshes.

337b. WESTERN RED-TAIL—*Buteo borealis calurus.*

Two pair seen in the valley. One nest on rocky cliff up Deep Creek with young June 1.

342. SWAINSON'S HAWK—*Buteo swainsonii.*
Several pair seen in different parts of the valley.

349. GOLDEN EAGLE—*Aquila chrysaetos.*
One pair near Crump Lake in rocky cliff, 1500 feet high.

352. BALD EAGLE—*Haliætus leucocephalus leucocephalus.*
One pair near Greeser Lake, nesting in Greeser Canyon, found by sheep herders, with young in nest.

355. PRAIRIE FALCON—*Falco mexicanus.*
Very common. Several pairs seen in various sections of the valley.

360a. DESERT SPARROW HAWK—*Falco sparverius phalæna.*
Six pair observed along the roads leading around the valley.

367. SHORT-EARED OWL—*Asio flammeus.*
One pair seen near Greeser Lake.

375a. WESTERN HORNED OWL—*Bubo virginianus pallescens.*
Very common. Generally seen near some ranch buildings resting during the day in large cottonwood trees.

378. BURROWING OWL—*Spcotyto cunicularia hypogæa.*
One pair seen near Dodson Lake with nest June 11.

390. BELTED KINGFISHER—*Ceryle alcyon.*
Found along Deep, Honey and Twenty Mile Creeks. Nesting in the sand banks June 1.

394a. GAIRDNER'S WOODPECKER—*Dryobates pubescens gairdneri.*
Several pairs seen and nests located well up in cottonwood trees June 1.

408. LEWIS'S WOODPECKER—*Asyndesmus lewisi.*
At least six pairs seen, and one nest in cottonwood tree on Deep Creek, June 6.

413. RED-SHAFTED FLICKER—*Colaptes cafer collaris.*
Quite common, and nesting in willow or cottonwood trees. Eggs five to eight, June 1 to 10.

420a. WESTERN NIGHTHAWK—*Chordeiles minor henryi.*
Observed in large numbers on Deep Creek. Arriving June 1. Not nesting by June 15.

435. MORCOM'S HUMMINGBIRD—*Atthis morcomi.*
Two pairs seen on Deep Creek. Identification, from one female specimen.

444. KINGBIRD—*Tyrannus tyrannus.*
Quite common in all sections nesting in juniper bushes June 1.

447. ARKANSAS KINGBIRD—*Tyrannus verticalis.*
A very common bird and found around all the farm ranches. Nesting in barns, telephone poles and high fences, June 10.

448. CASSIN'S KINGBIRD—*Tyrannus vociferans.*
One pair on Twenty Mile Creek.

457. SAY'S PHŒBE—*Sayornis sayus.*
Several pairs seen on Deep Creek.

462. WESTERN WOOD PEWEE—*Myiochanes richardsoni richardsoni.*
Several pair on Deep and Twenty Mile Creek in the willows along the streams. No nests June 15.

469. WRIGHT'S FLYCATCHER—*Empidonax wrightii.*

Several pairs seen in the poplar trees near the ranches, nesting high up in the trees, June 10.

474c. DESERT HORNED LARK—*Otocoris alpestris leucolæma.*

Only a few pair seen in the entire valley, June 1.

475. AMERICAN MAGPIE—*Pica pica hudsonia.*

Very common on Twenty Mile and Honey Creek, but none seen on Deep Creek. Nesting in willows May 25. Birds very destructive to eggs of other birds.

481. CALIFORNIA JAY—*Aphelocoma californica.*

A very common bird, found along the streams and irrigation ditches.

486. AMERICAN RAVEN—*Corvus corax sinuatus.*

Two pair seen in the entire valley.

489. NORTHWEST CROW—*Corvus caurinus.*

Very common. Nesting but in the marshes in willow trees. All nests found had young by May 25. A bird destroying many eggs, especially of the Duck family.

494. BOBOLINK—*Dolichonyx oryzivorus.*

A pair or two found in every alfalfa field.

495. COWBIRD—*Molothrus ater.*

A number were seen at Adel and Warner.

497. YELLOW-HEADED BLACKBIRD—*Xanthocephalus xanthocephalus.*

Very common, and nesting in the many tulie and flag swamps. Eggs three to four, June 10 to 15.

498F. NORTHWESTERN RED-WING—*Agelaius phœniceus caurinus.*

Very common and found nesting in the wild grass meadows near the marshes. Eggs three to five. Full sets by May 27.

499. BICOLORED BLACKBIRD—*Agelaius gubernator californicus.*

Three pair nesting near Pelican Lake. Eggs 3. Nest in a clump of wild grass.

501b. WESTERN MEADOWLARK—*Sturnella neglecta.*

Quite common in the meadow lands around the entire border of the valley.

508. BULLOCK'S ORIOLE—*Icterus bullocki.*

Very common. Found near all the ranch houses in poplar trees and nesting along the stream. Nests very often high up and some as low as ten feet from ground. Eggs 5. Full sets June 15.

510. BREWER'S BLACKBIRD—*Euphagus cyanocephalus.*

Very common. Probably 100 pair nesting within a mile of Adel on Deep Creek. Nest built in cottonwood, willow, juniper trees and sage brush. One pair of birds had stolen the new nest of Bullocks. Eggs 4 to 7, May 20 to June 15. Oriole had a set of six eggs.

514a. WESTERN EVENING GROSBEAK—*Hesperiphona vespertina montana.*

Nesting in the pine forests at an elevation of 6500, and high up in the trees.

517a. CALIFORNIA PURPLE FINCH—*Carpodacus purpureus californicus.*

Several pairs along Deep Creek, but no nests located.

519. HOUSE FINCH—*Carpodacus mexicanus frontalis.*

Common near all the ranch houses, which had trees or orchards. Nest June 10.

529a. PALE GOLDFINCH—*Astragalinus tristis pallidus.*

A band of about twenty birds seen June 1.

552a. WESTERN LARK SPARROW—*Chondestes grammacus strigatus.*

The most common sparrow found in the valley. Nesting on the ground in pastures and meadows.

581B. MOUNTAIN SONG SPARROW—*Melospiza cinerea montana.*

Several pair seen near Adel and Warner.

586. BLACK-HEADED GROSBEAK—*Zamelodia melanocephala.*

A common bird along the water courses in the deep willow thickets.

599. LAZULI BUNTING—*Cyanospiza amœna.*

Two pair seen on Deep Creek nearly every day June 1 to 10.

607. WESTERN TANAGER—*Piranga ludoviciana.*

A very common bird along the mountain streams, but not as numerous as Bullock's Oriole.

612. CLIFF SWALLOW—*Petrochelidon lunifrons.*

Nesting by the thousands on the high cliffs of Warner Valley. Eggs four to five, June 15.

613. BARN SWALLOW—*Hirundo erythrogastra.*

Quite common, nesting under bridges and under barns, June 10.

614. TREE SWALLOW—*Iridoprocne bicolor.*

Very common out in the marshes where willows or cottonwood trees with holes were found June 10.

615. VIOLET-GREEN SWALLOW—*Tachycincta thalassina lepida.*

Two pair nesting near Adel in dead willow stubs June 10.

616. BANK SWALLOW—*Riparia riparia.*

Numerous pairs nesting in a bank on Deep Creek, half mile east of Adel. June 1, four to five eggs.

619. CEDAR WAXWING—*Bombycilla cedrorum.*

Seen quite frequently in all parts of the valley on the west side.

627a. WESTERN WARBLING VIREO—*Vircosylva gilva swainsoni.*

One pair seen at Adel, nesting in poplar grove, June 10.

652. CALIFORNIA YELLOW WARBLER—*Dendroica æstiva brewsteri.*

This warbler was found in large numbers on Deep Creek and Twenty Mile Creek. It seemed that nearly every clump of willow bushes had a pair of warblers. Eggs four to five, June 10 to 20.

681a. WESTERN YELLOW-THROAT—*Geothlypis trichas occidentalis.*

Very common along all the water courses, arriving about June 1.

683a. LONGTAILED CHAT—*Icteria virens longicauda.*

Common in and along the water courses. Nesting in willow bushes June 15.

701. AMERICAN DIPPER—*Cinclus mexicana unicolor.*

One pair nesting at falls on Deep Creek June 1.

715. ROCK WREN—*Salpinctes absoletus absoletus.*

Two pair seen up Deep Creek canyon.

721b. WESTERN HOUSE WREN—*Troglodytes aedon parkmani.*

A pair generally nesting at each farm house. Eggs May 20, young June 15.

725a. TULE WREN—*Telmatodytes palustris paludicola.*

Found in large numbers in the tulie swamps near the lakes. Eggs four to six, June 1.

758. Russet-backed Thrush—*Hylocichla ustulata ustulata.*

One pair on Deep Creek, in the dense willow, but hear many singing along the streams.

761a. Western Robin—*Planesticus migratorius propinquus.*

Very common nesting bird of the valley. Eggs four to five and found May 20 to June 10.

768. Montana Bluebird—*Sialia currucoides.*

Several pair observed in the valley and on the tablelands up to 6500 elevation.

The diversified fauna of Warner Valley makes it the ideal nesting home of many birds, the list observed by me containing 102 specie, and no doubt some of the rare species were not found.

The greatest enemy to bird life in the valley, especially to eggs, are the crows and magpies, as in the vicinity where these birds were nesting hundreds of egg shells, especially duck's, were found.

Coyotes and skunks also destroy nests and kill hundreds of the young birds.

The ducks, nesting in their order of numbers are: Mallard, Gadwall, Cinnamon Teal, Redhead, Shoveller, Pintail, Ruddy and Canvasbacks.

Other water fowl in order of abundance: Ring B. Gulls, Forster's Tern, Avocets, Am. Eared Greebes, Am. Bittern, Caspean Tern, Great Blue Herons, Black Tern, Pelicans and Sand Hill Cranes.

These birds cover the main bird life of the great marshes and lakes of Warner Valley.

SOME REMARKS ON THE FACIAL EXPRESSION OF BIRDS

BY GEORGE M. SUTTON

Before an audience of laymen the writer once made an allusion to the "bright and interesting face of a White-throated Sparrow." The remark caused a considerable amount of comment among certain ones of the audience who had never thought of the possibility that a bird as well as a human being may possess facial expression. Since that time, and, in fact, with such circumstances as a greater or less stimulus, a considerable amount of recording, and a vastly greater amount of observation have been accomplished with the end in view of becoming familiar with the facial expression of birds. It has become evident that even between birds of close relationship great differences may occur in this respect, and similarly, birds of distant connection may exhibit surprising similarities. It may be well to state at the outset that the eye proper, that is, the exposed cornea, with the pupil and usually colored iris showing through the translucent membranes, is not so much responsible for facial expression as is usually thought. Rather, as regards the eye, the lids in their position and movement are responsible. That the dilation of the pupil influences expression of the eye greatly is evident to one who closely observes a Great Horned Owl in a trap on the ground, whose eyes, when focused on the dark leaves at his feet, give the impression of being mellow, liquid, and lustrous, and which as suddenly as the movement of the head itself, become hard, piercing, and terribly fierce as the captive, facing the observer and the light, raises his feathers and snaps his bill sullenly.

That an Owl possesses facial expression seems readily conceivable, due to the fact that the arrangement of eyes, bill, and facial discs immediately suggests the human face. For this reason, and also on account of the possibility of successfully keeping this group in confinement, Owls have been the subject of much of the writer's study, and aside from the great delight in possessing the beautiful soft creatures, observation has brought to light numerous most interesting matters. The Screech Owl, which shrinks to become a stub on the branch where he perches, is a familiar proof that the expression of the face of a bird depends not so much on the eyes as on the eyelids, and it also shows what a great part the general contour

of the head and body plays as well. When the Screech Owl "freezes," to use the word of some authors, no change, apparently, takes place in the eye proper, but the lids are arranged in a manner used at no other time, giving the individual an unspeakably droll expression. The effect of wooden rigidity rather than downy softness is gained by a close compression of all the feathers, and the ear-tufts are raised conspicuously, though curiously enough, at such incongruous angles that symmetry is usually lost. Often, at such times, the mandibles may be parted, an addition to the effect of total loss of inherent owlish characteristics. It is possibly not so well known that the Long-eared Owl resorts to the same trick at times, and even, seem it ever so strange, the Great Horned Owl—a bird whose bold nature and great strength would seem a sufficient protection, without its resorting to so cowardly an implement as the mere imitation of a stick. The writer once had the immense satisfaction of actually overlooking one of his pet Horned Owls, which, perched on a barrel near a large pile of gunny-sacks, became so much a part of his surroundings that some time was spent in searching in the darkest and least accessible parts of the barn. When, suddenly, as it became evident that a certain supposed sack was actually the Owl, assuming the ludicrous aspect of his small relative, the Screech Owl, it provoked a hearty laugh. In every respect was this great "Tiger among birds" "frozen," even as the little Screech Owl. The outlines of the eyelids were almost exactly the same, and even in such respects as the parting of the mandibles was the simulation complete. In the face of this Owl, as he was for the first time discovered, there appeared an indiscribably humorous expression, as if the clever bird realized perfectly well just what was going on in the mind of the observer!

Anyone who has had Owls as captives will remember the great changes which come over the expression of an Owl's face when he suddenly realizes that he is no longer a captive, but free. The eyes usually open wider, and the head feathers compress, as with bobbing movement or sudden turning of the head, he peers about for a possible place of refuge. The expression, evident in most wild birds, is the most glorious the individual ever assumes. Even in a much worn and bedraggled individual an unmistakable trimness becomes evident, when he realizes that freedom is again his own.

The painter of birds must realize that for each species of

Owl there is a distinct facial expression, though in cases there is a marked similarity. Certain expressions, for example, of the Short-eared and Long-eared Owls suggest each other strongly, due probably to the fact that the eyes of both are comparatively small,—and there are certain points common to the Great Horned and Snowy. But there is quite as great a difference between the facial expressions of a Barn and Barred Owl as there is between those of a Canary and a squirrel, at least so far as shape and general effect of the facial arrangement is concerned. The Barn Owl's face may be described as sad, weird, or mystical; the Barred Owl's as open, rather mild, and frank. The weird face of the Barn Owl has gained for him an enviable publicity, for the most part in small town newspapers. He is usually heralded as the Monkey-face, and may even be described as a new beast—half monkey and half Owl. All this enthusiasm in announcing the bird as unheard of before is due to the extremely odd, even unique face. The Barn Owl, so far as the writer's experience goes, never "freezes."

The Owls, as a group, are particularly attractive in a discussion of this phase of bird-study, and might well form the subject of an entire paper, but possibly it is well to cover more ground in this paper which must be, at best, merely a collection of preliminary remarks. But before passing on, attention should be called in this connection to the Marsh Hawk, which in certain moods, and viewed from certain angles, suggests an Owl considerably. A female Marsh Hawk from front, with feathers of the head and body fluffed out, becomes a very owl-like creature. In this case the similarity is due to the facial disc of feathers, which, as is well known, is characteristic of the genus *Circus*.

Among the Falcons, Buzzard-Hawks, Accipitrine forms, and Eagles, the superciliary shield plays an important part in the facial expression, in every case giving them, with the aid of clean-cut contour and bold bill, a characteristically wild, fierce, physiognomy. In the lovely dark eyes of the Sparrow Hawk, and the great far-seeing orbs of the Golden Eagle is a keen, intelligent expression closely akin, while in almost every bird of prey is a certain brilliance and piercing quality due to the fact that the eyes are deeply set, and that the high light, and often brilliant iris, blaze out from comparatively sombre surroundings. But if for an instant it is imagined that the eye with its superciliary shield only is responsible for the fierce visage of

a Hawk, let the same creature fluff out after a satisfying meal, when the soft edges of a fluffy crest, before compressed, and the assumption of an easy attitude of body, immediately ameliorate the fierceness of the eye, and the bird seems a different creature. Similarly, though to a greater degree, may a sick hawk become in all senses of the word, sad and pitiable, though the attractive beauty of the normal expression may return for fleeting instants. The fact that many caged or zoo birds are not in good health is sufficient warning that the artist must avoid using them as models, if he is to catch the living expression of the wild bird. Better a fleeting glimpse of the true, wild face, than hours of study of the average unfortunate captive, who has lost all joy of life, and every hope of freedom.

Legend and sketch alike portray the Hawks as fiercest of birds; but to the contrary, within the scope of the writer's memory, there does not dwell the semblance of a sweeter bird face than that of of a downy nestling Rough-legged Hawk, which, resting in his nest, far above a Labrador river, had no reason to fear such an oncomer whom he had never known. Surely even to the least imaginative, the attractive face of that little hawk could but win sympathy and affection, though it will be readily admitted that the parent birds as they swooped about with clear screams were exponents of typical hawkdom in every sense of the word.

The Turkey Vulture offers an interesting case of lack of positive facial characteristics, though no one could of course mistake a Vulture's face for that of any other bird. But there is scarcely anything to suggest fierceness, fear, offensiveness, or even intelligence in any marked degree. The case in hand brings to its proper place in importance the influence of the crest, and other head feathers in the facial expression. Remove the feathers entirely from any bird's head, and it is rather startling that the eye seems to lose all its former importance as a factor. However, that there is a marked difference in the expressions of similarly headed birds, such as the Wild Turkey and Turkey Vulture, goes without saying, and it will be observed that the bill, nostrils, and color and lustre of the eye are all important factors.

Plates of birds often give the impression that a bird's eyes are perfectly round, and though this is actually sometimes the case, it is very unusually so, and quite the exception to the rule. Similarly, in mounted specimens one may often discover

the same defect. The taxidermist endeavors to round out the lids to such a degree that the delicate angles and contours responsible for the eye's expression are hopelessly lost. Especially is this the case with the Shore-birds, whose usually very dark eyes are framed in delightfully shaped lids. In some cases the fore angle is quite acute, but in the greater number of species the rear angle is the smaller by far, and sometimes lower down in the head than the fore-angle. All these facts mean that the student or artist who would successfully paint or mount birds must know the facial expression of his subjects. The Woodcock's rather droll expression is often imperfectly represented, though it is almost impossible to lose utterly *this* expression, due to the fact that the eye must be placed far back in the head if the anatomy of the creature is observed at all. Nine times out of ten, in mounted specimens, the beautiful narrowed eyes of the Lesser Yellow-legs are rounded out like those of the Black-bellied Plover, and the proportion is almost as disheartening, I believe, in the case of published portraits of the bird.

If, in drawing a bird's head, the eye be placed intentionally too far back or too high in the head, it will be evident how important such matters are, and when it is properly realized that every minute detail is for the most part just as constant as the more blatant ones, the artist and taxidermist will come to acknowledge the gravity of his task of bringing real lifelikeness to his creations.

In the case of nearly all woodpeckers the rear angle of the eye is higher than the fore. If this point is not properly imitated or reproduced a large part of the typical Woodpecker expression goes. And similarly, in the case of Loons and many divers, the eyes are rather elliptical, and give, together with their color and position in the head, a rather serpentine visage. The Puffin has an indescribably artificial looking eye, though there is a suggestion of more actuality when the bird grasps something in its bill. The cornea of the Puffin's eye is very flat. The iris is a cold, flat gray, and the high light, due to the flat surface of the cornea, is hardly apparent at all at times. These points give the Puffin an expression all his own, and coupled with the notably eccentric bill make it one of the most characterful species.

In the case of some Grebes, notably the Horned as a common example, the eye is truly wonderful, aside from its being

part of a bird's face. Like a glowing gem of salmon pink, set in a soft gray or deep black velvet matrix, its white encircled pupil gives a startlingly snakelike look, even in a dead specimen. A burnished gold edging about the pupil of the Razor-billed Auk gives the same effect and the pupil of this bird's eye is delicately fringed in a manner I believe unique. The Road-runner adult is another species with a serpent-like face, due to the fact that the pupil of the eyes is ringed with a light circle, in addition to the dark colored iris.

Those who know the small birds intimately will agree that various feelings are expressed in the face; that there is a cognizable difference between the contented, the angry, the sick, and the terrorized individual. Whether any other moods, such as jealousy, laughter, or an appreciation of humor, and "vamping," may be thus indicated by the facial expression is highly doubtful, and of course implies a considerable range of intelligence for the bird. The feathers of the terrorized bird are usually pressed close to the body, and the feathers of the head and neck and legs are so tightly drawn in that the anatomy is plainly visible—where in the same bird in a contented condition a rounded contour would be evident. Fear is often indicated by parting of the bill, and of course very rapid breathing. Every collector knows that a bird just shot, and picked up in all its fresh beauty from the ground possesses a wonderfully sweet facial expression, one rarely if ever seen in the living bird. This may be due partly to the closing lids, but it is caused more, possibly, by the delicate lifting of all the feathers, and the fact that the eye has lost all focal powers. How many times must the collector think, even if he does not speak, his thoughts: "What a beautiful face this little bird has."

To watch a caged canary for a short time reveals the fact that it directs its eyes either forward, up, or down, at will, much as we do; this muscular action is the property of many species, to a greater or less degree, but in the Owls and Hawks is slight and scarcely noticeable. It means, therefore, that the Owl, to follow an object, must turn its head, and not only its eyes,—whereas, other forms may look forward or to the side with equal ease. Thus may the artist depict a small Passerine form with bill pointed directly at the observer, and the eyes also, whereas, if the Owl's profile be given the focus of the eyes of the bird must be in the same direction as that of the bill.

The presence or absence of eyelashes affects the facial ex-

pression to a degree, though this is possibly a negligible matter. Among the Cuckoos, which have lashes, the face is characterized by a somewhat mystical solemnity. The contrastingly colored lids in this case are of great importance.

The matter of high lights on the eyes is interesting. The writer once crippled a Killdeer, and while it was yet living observed that in the outdoors at close range, almost the whole upper half of the eye was in high-light, and a vivid reflection of the landscape was apparent. Moreover, the high-light was much dimmer than usual—in fact several shades deeper than the white on the throat. The experience rather spoiled a theory held up till this event, namely, that the whitest white and deepest black on the bird always occurs in the eye. It seems that the deepest dark does occur in the eye; but as to the whitest white,—that is another matter.

A word may well be said as to the practical methods of registering and noting the correct facial expression. Constant use of the camera is of course a splendid course to follow, but one finds use of the camera often impracticable, and furthermore, if it is desired to preserve the shades of color of the fleshy parts, water color sketches will best serve the purpose. Thus, when birds are shot, may their life colors be preserved, and the comparative distances of base of bill to eye, and contour of the feathers, be carefully noted and recorded. Later, then, with the use of a skin, some photographs perchance, illustrating habitat, and the field sketches, may a final portrait of the bird be executed which may do at least a fair amount of justice to the subject. But better still is the detailed drawing or portrait from life.

In the foregoing very much scattered remarks a mere hint at the scope of the subject has been given; but it may suggest to some at least an interesting field of endeavor, and will form the basis of a plea for more accurate bird taxidermy, and redoubled effort to make all bird portraits lifelike in every respect. Though the artist will forever cry that we must idealize and improve Nature, it may truly be said that Nature herself is so glorious that we would do well to be content in depicting her even as she is.

THE BIRDS OF GREENWOOD LAKE AND VICINITY
(NEW JERSEY AND NEW YORK)

LOUIS S. KOHLER, PATERSON, N. J.

Greenwood Lake, one of the most popular and most visited summer and winter resorts of the vacationist, fisherman and naturalist of New York City and the surrounding suburbs, being distant about two hours' journey from the metropolis, is, without doubt, the finest body of water in nothern New Jersey and southern New York. This lake is about six hundred and twenty feet above sea level, and is approximately seven miles long and varies in width from three-quarters to one mile. About half of the lake is located in the State of Jersey and the other half in the State of New York.

The country bordering this magnificent body of water is of a very rugged nature and amply satisfies every desire of the ornithologist and oologist who may care to roam about its precincts. To the west the Bearfort and Bellvale Hills rear themselves to a commanding heighth of about seven hundred feet and to the east the Sterling Hills extend nearly the whole length of the lake. To the north, about two miles away, Mount Peter, the highest elevation in the vicinity, is perhaps the most visited spot of the whole section, and at the northeast Bear Rock, whose elevation is about 1200 feet, is likewise a favorite climb of nearly every able-bodied visitor of this section.

At the southern end of the lake, Belcher Creek and the marshy section on either bank affords every opportunity to the student to observe many of the Anseres, Herodiones, Pygopodes, as well as the Limicolae which visit this inland lake.

About a mile up along the eastern bank the dam and overflow of the lake empties its surplus water into the Wanaque Creek, whose valley is, indeed, the Mecca of every bird student as far south as the Hewitt Station. To the west of the lake, about two miles above the southern end, a small body of water, known as Surprise lake, is nestled in the Bearforts some four hundred feet above the surface of the main lake and this also is an excellent spot for the bird student.

Following the eastern bank from the dam, the principal points of interest to the ornithologist are: The shallows just above the Ice House, Storms' Island, Hickory Point and Finigan's Cove, Echo Rock, Chapel Island and the long cove at the extreme northern end of the lake, to the east of the Village of

Greenwood Lake, N. Y. On the west bank south from Greenwood Lake Village, Deacon's Point is the first point of interest. Thence follows Furnace Cove, the trail to Surprise Lake, and Belcher Creek and the adjacent marshes at the extreme southern end.

The writer, during the past fifteen years, has spent many days roaming about and paddling during the summer and skating during the winter on the surface of this lake and has secured an approximately correct list of the winter and summer residents, vernal and autumnal migrants, and visitants, both rare, casual and regular, as will be indicated by the appended list, which also bears numerous notes regarding each species mentioned. And for the purpose of making this list of the most value to the resident or visitor of this section at any time of the year, the writer, during the years 1916 and 1917, spent from two to three days each week during every month of those two years in making observations on and about the lake, therefore, it is quite fair to assume that most of the conclusions that he has arrived at may be accepted as indicative of the prevailing conditions of bird-life in this section.

Before proceeding with this list of birds of this section, the naturalist visitor will in all probability be interested in some of the other forms of natural life prevailing in this locality and, for their benefit, a short resume is included.

Of the Amphibians and Reptiles, the writer has located from time to time specimens of the Spotted Salamander (*Ambystoma punctatum*), Red-backed Salamander (*Plethodon erythronotus*), Sticky Salamander (*Plethodon glutinosus*), Long-tailed Salamander (*Spcierpes longicauda*), Red Salamander (*Spcierpes ruber*), Dusky Salamander (*Desmognathus fusca*), Newt (*Diemictylus viridescens*), Toad (*Bufo americanus*), Swamp Tree Toad (*Pseudacris triseriatus*), Cricket Toad (*Acris gryllus crepitans*), Pickering's Tree Toad (*Hyla pickeringii*), Common Tree Toad (*Hyla versicolor*), Bull Frog (*Rana catesbeiana*), Green Frog (*Rana clamata*), and Wood Frog (*Rana sylvatica*), Water Snake (*Natrix sipedon*), Red-bellied Snake (*Storeria occipito-maculata*), DeKay's Brown Snake (*Storcaria dekayi*), Ring-necked Snake (*Diadophis punctatus*), Black Snake (*Coluber constrictor*), Garter Snake (*Thamnphis sirtalis*), Hog Nose Snake (*Heterodon platyrinos*), Copper Head Snake (*Agkistrodon contortrix*) and Rattle Snake (*Crotalus horridus*), Snapping Turtle (*Chelydra serpentina*), Painted Terrapin (*Chry-*

semys picta) and Muhlenbarg's Terrapin (*Clemmys muhlenbergii*), Wood Tortoise (*Clemmys insculpta*), Spotted Terrapin (*Clemmys guttata*) and Box Tortoise (*Terrapene carolina*).

Of the Lepidoptera, Diptera, Hemitera, Hymenoptera, Odonata and Orthoptera there are many representatives and the field offers many opportunities to the entomologist throughout the section. Likewise the Mammalia and other forms of Vertebrata and Invertebrata. To the geologist and Indian relic hunter this section is rich in finds to all alike.

Colymbus holboelli—HOLBOELL'S GREBE.

One male was observed on November 25, 1918, swimming and diving on the surface of the lake near Pine Island during the early morning. This is the only record that I have been able to find of this species on this lake, although it is quite possible similar occurrences may have been made by this species.

Colymbus auritus—HORNED GREBE.

A regular spring and fall migrant. First observed on this lake on April 14, 1906, and the latest record for any year was made on October 12, 1914. A male and female were observed on August 10, 1912, which is the earliest autumnal record made. These birds are well named by the natives, whose vernacular for them is Dipper Ducks. In every instance they would never let me approach nearer than seventy-five feet but that they would submerge and re-appear some two or three hundred feet off.

Tacbybaptus podiceps—PIED-BILLED GREBE.

A regular spring and autumn migrant. Occasional summer resident. They appear about April 10 in the spring and are last seen about October 5 in the fall. Never more than about a total of fifteen birds are observed each spring and fall. Two nests were located by the writer in the marshes near Belcher Creek, one June 5, 1916, with two fresh eggs, and another on July 1, 1917, with a complete set of seven eggs, well incubated.

Gavia immer—LOON.

A rare visitant. One male was observed by the writer on April 2, 1914, swimming on the lake near Finigan's Cove. This constitutes all that I can find for this locality, although a resident of Hewitt advises me he shot one some years ago and bore out the statement by producing the bird stuffed. This gentleman claims he secured tihs bird near Pine Island on one of his duck-shooting excursions.

Larus argentatus—HERRING GULL.

A common spring migrant, but rare in the autumn. Occasional during the winter when the lake is free of ice. Only one autumnal date (October 3, 1914) has been secured.

Hydrochelidon nigra surinamensis—BLACK TERN.

A dead bird was picked up by the writer on the bank of Belcher Creek on June 8, 1916. Apparently a straggler.

Mergus americanus—MERGANSER.

An occasional winter visitant. Observed January 18, 1903, at Chapel Island, and on February 12, 1914, at Belcher Creek.

Anas platyrhynchos—MALLARD.

An irregular visitant. Observed on October 16, 1906, at Sterling Forest during the early morning, one male and two females.

Anas rubripes—RED-LEGGED BLACK DUCK.

Regular migrant. Two specimens examined by writer from a lot of six shot by Cleveland Cook of Haskell, N. J., on November 20, 1906, which were secured on Belcher Creek. One was found fast in a muskrat trap along this creek by the writer on March 10, 1912, which, after being released, made off towards the northern end of the lake.

Anas rubripes tristis—BLACK DUCK.

Abundant migrant. Earliest fall date secured was September 30, 1911, and latest spring date April 12, 1908.

Nettion carolinensis—GREEN-WINGED TEAL.

Migrant and occasional winter resident. A few are observed each migration. Two winter dates secured, one December 28, 1904, and one February 6, 1916.

Querquedula discors—BLUE-WINGED TEAL.

Migrant and occasional winter resident. Its status is practically the same as the preceding species. Observed during the winter on December 15, 1910.

Aix sponsa—WOOD DUCK.

Formerly a common migrant and occasional resident, but of late years is only rarely met with. Last recorded for the vicinity was on April 13, 1916, a male and a female.

Marila marila—GREATER SCAUP DUCK.

A rare visitant. One examined among a lot of Black Ducks shot on November 25, 1910, near Finigan's Cove.

Clangula clangula americana—GOLDEN-EYE.

Winter visitant. Found by the writer off Deacon's Point on December 2, 1902.

Branta canadensis—CANADA GOOSE.

Regular migrant. Observed every year both in large and small flocks from October 1 to 15 in the fall and from March 10 to April 15.

Botaurus lentiginosus—BITTERN.

An irregular migrant and an occasional breeder. A pair was observed near Belcher Creek on May 30, 1916, and I believe they must have nested here this year, although a careful search revealed nothing that would indicate a nest.

Ixobrychus exilis—LEAST BITTERN.

An occasional summer resident. Found on Belcher Creek on June 14, 1914, and again on July 28, 1916. These are only dates secured by the writer, but it is quite possible they breed here each year.

Ardea herodias—GREAT BLUE HERON.

A regular migrant. Earliest date in spring secured was April 2, 1906, and the latest fall date October 6, 1913. Observed at Surprise Lake during 1908 and 1911, and in Belcher Creek marshes nearly every year since 1904.

Butorides virescens—GREEN HERON.

A regular summer resident. Nests are found each year in Belcher Creek marshes. Arrives about April 15 and remains until September 30.

Nycticorax nycticorax naevius—Black-crowned Night Heron.

Rather common resident. Most generally seen in evening when flying about overhead and uttering their peculiar call. No record of their nesting about this lake has come to my attention.

Rallus elegans—King Rail.

An occasional visitant. Observed on Belcher Creek on May 27, 1916. Only record.

Rallus crepitans—Clapper Rail.

One specimen which is claimed to have been secured on Belcher Creek was examined by the writer during 1914 in the possession of C. McKinnon of Ringwood. It is very doubtful that this was seured here as this is many miles above their usual range in the State of New Jersey.

Rallus virginianus—Virginia Rail.

Common summer resident. Two nests have been located by the writer along Belcher Creek, one on June 24, 1910, and one on May 31, 1913. Both had sets of nine eggs well incubated.

Gallinula galeata—Florida Gallinule.

One male found floating on the surface of Belcher Creek on July 2, 1916, in a bad state of decomposition. Only record.

Philohela minor—Woodcock.

Summer resident. Nests are found each year on Belcher Creek marshes. Appear in this vicinity about April 1 and leave about November 25.

Gallinago delicata—Wilson's Snipe.

A regular migrant. Appear in the spring about April 10 and pass to the south between November 5 and 20.

Actitis macularia—Spotted Sandpiper.

Common summer resident. Nests are found nearly every year. Arrive about April 25 and depart about September 30.

Oxyechus vociferus—Killdeer.

Rather common migrant and occasional summer resident. One nest with eggs found on a farm near Hewitt on May 2, 1912. Only nest found in this vicinity. Rarely ever seen in companies of more than two or three at one time.

Colinus virginianus—Bob-white.

Permanent resident on all sides of the lake. No nests have been found by the writer in this vicinity, but, as the birds are present during the breeding season, it is quite certain that they breed here.

Bonasa umbellus—Ruffed Grouse.

Permanent resident, mostly in the heavily wooded hills adjacent to the lake, both in New Jersey and New York. Two nests have been found, one near Surprise Lake, on May 28, 1914, and another along the Wanaque River, just above Hewitt, under an old rail fence, on June 2, 1917. Both of these nests had sets of ten eggs in them and both nearly ready to hatch.

Phasianus colchicus—Ring-necked Pheasant.

A rather common permanent resident about the lake. Usually observed in small roving flocks of three or four, and more often, a single male or female is observed.

Zenaidura macroura carolinensis—Mourning Dove.

A common sumer resident. While not as plentiful as a decade ago, still many can be observed flying about, usually in pairs, throughout the summer season. They usually arrive in March and April and remain until the middle of November.

Cathartes aura septentrionalis—Turkey Vulture.

An occasional visitant. One observed at Hewitt on May 7, 1912, feeding on some offal from a local butcher, who cast some small pieces of lamb on a garbage disposal. I came upon this bird unexpectedly and obtained a favorable chance to positively identify it before it made off.

Circus hudsonius—Marsh Hawk.

Common permanent resident. More usually met with during the warmer months than during the winter months than during the winter, but a few may be found even on the coldest days of each year. Belcher Swamp is a favorable place for this species.

Accipiter velox—Sharp-shinned Hawk.

Rather common throughout the year, but most often met with during the vernal and autumnal migrations. No record of it breeding here, save on May 3, 1909, the writer observed a pair feeding three young about two weeks old. As these young were still in the downy stage it is very possible that they were hatched in the immediate vicinity.

Accipiter cooperi—Cooper's Hawk.

A common migrant, occasional summer resident and also a rare winter visitant. Have no record of it breeding in this vicinity. About nine miles to the southwest, at Echo Lake, a nest with three eggs was found on April 10, 1908.

Buteo borealis—Red-tailed Hawk.

An occasional winter visitant and rather common migrant. Observed at Finigan's Cove on December 3, 1913, and at Belcher Creek on February 12, 1915.

Buteo lineatus—Red-shouldered Hawk.

Rather common resident. Writer examined one shot near Brown's Hotel on April 16, 1914, a full grown male. Others observed at various points about the lake over nearly all the months of the year.

Buteo platypterus—Broad-winged Hawk.

Occasional summer resident. Rather common migrant. No record of breeding here.

Archibuteo lagopus sanctijohannis—Rough-legged Hawk.

A regular winter visitant. Occasional during the migrations.

Haliæetus leucocephalus—Bald Eagle.

Occasional about this lake. One male observed on June 18, 1906, near Deacon's Bend and another at Sterling Forest on October 20, 1910.

Falco peregrinus anatum—Duck Hawk.

Transient visitant. Observed in Belcher Creek Swamps on November ?, 1907, and at Greenwood Lake, N. Y., on February 6, 1910.

Falco sparverius—Sparrow Hawk.

Common permanent resident. Nests have been found each year since 1904 on different points about the lake, usually in deserted Flicker or Red-headed Woodpecker cavities.

Falco columbarius—Pigeon Hawk.

Common transient. May be seen about the lake at frequent intervals. No record of it breeding here, and it is seldom seen during the breeding season.

Pandion haliaetus carolinensis—OSPREY.

An abundant migrant. Appears locally about April 20, and individuals are observed as late as October 10. One nest was located with a set of three eggs on May 30, 1904, on the east shore of this lake near Finigan's Cove.

Asio wilsonianus—LONG-EARED OWL.

Occasional visitant. Observed by the writer near Sterling Forest on November 13, 1914, and another specimen was found dead along the Wanaque River near Awosting, apparently having been shot by a hunter and left, November 25, 1916.

Strix varia—BARRED OWL.

A rather common permanent resident. One nest was located on April 3, 1910, at Sterling Forest, which constituted my only breeding record.

Otus asio—SCREECH OWL.

A common permanent resident and a regular breeder about this lake. Both phases of plumage can be found each year.

Bubo virginianus—GREAT HORNED OWL.

A rare visitant. Observed twice by the writer. First on May 3, 1912, and second on November 28, 1917, both records being made near Surprise Lake.

Coccyzus americanus—YELLOW-BILLED CUCKOO.

Common summer resident. Arrives May 5 to 20 and departs October 1 to 10. Breeds at many points about the lake.

Coccyzus erthrophthalmus—BLACK-BILLED CUCKOO.

Common summer resident. Arrives May 15 to June 4, slightly later than the preceding species, and departs usually ten days earlier in the autumn. Nests are occasionally found, but not as often as the Yellow-billed Cuckoo.

Ceryl alcyon—BELTED KINGFISHER.

Common summer resident, and breeder. Prior to June 2, 1911, no nests were located here, but since that date every year has been productive of one or two, and even three, as in the case of 1917. Are observed as late as November 30 here, and occasionally as early as February 22.

Dryobates villosus—HAIRY WOODPECKER.

Permanent resident. To be found in the heavily wooded sections throughout the year. Two nests with eggs found on May 16, 1907, at Ringwood, three miles to the east of this lake, which constitutes the only record of the vicinity made by the writer. It is quite possible, however, that closer observation would reveal nests each season as the birds are present throughout the breeding season each year.

Dryobates pubescens medianus—DOWNY WOODPECKER.

Common permanent resident, and also an abundant breeder. It is more abundant during the colder months than during the other portions of the year.

Sphyrapicus varius—YELLOW-BELLIED SAPSUCKER.

Common visitant throughout the year. Never resident.

Melanerpes erythrocephalus—Red-headed Woodpecker.

Rather common permanent resident. Never abundant, but some may be observed on each stroll through the adjacent woods throughout the year. Nests are found occasionally in secluded spots and the adults and young can be observed wandering about after the breeding season almost every year.

Colaptes auratus luteus—Flicker.

Common summer resident. Also fairly abundant some winters. In 1907, 1910 and 1916 they were to be found almost daily throughout the colder months, but during the other years only a few scattered individuals were observed during December and February and March. Breeds and nests in every available dead stump throughout the section.

Antrostomus vociferus—Whippoorwill.

Common summer resident. Arrives May 7 to 20 and departs from September 10 to 30. Breeds and nests at nearly all the more sparsely settled sections about the lake. It is particularly abundant along the Wanaque River between the dam and Hewitt and can be observed every night during the spring and early summer on all sides.

Chordeiles virginianus—Nighthawk.

Common summer resident. Arrives May 15 to 30 and departs September 9 to October 1. Nests are occasionally found, but not as often as the preceding species. This species is more often seen during the day than the preceding.

Chaetura pelagica—Chimney Swift.

Common summer resident. Arrives April 26 to May 15 and departs September 15 to October 20. Nests abundantly throughout the section in unused chimneys of nearly all the houses.

Archilochus colubris—Ruby-throated Hummingbird.

Common summer resident. Arrives May 7 to 15 and departs September 4 to 15. Nests are occasionally found but are usually very difficult to find because of the seclusive habits of this species.

Tyrannus tyrannus—Kingbird.

Common summer resident. Arrives May 6 to 24 and departs September 2 to October 1. Breeds and nests throughout the vicinity of the lake.

Myiarchus crinitus—Crested Flycatcher.

Common summer resident. Arrives May 6 to 30 and departs August 20 to September 15. Common breeder and home builder throughout the section.

Sayornis phœbe—Phœbe.

Common summer resident. Arrives March 16 to 25 and departs September 28 to October 24. Nests under bridges and in open sheds throughout the section.

Nuttallornis borealis—Olive-sided Flycatcher.

A rare visitant. One was observed by the writer in the Wanaque River Valley on September 6, 1917. This bird was perched in a river birch just off the railroad right-of-way and close enough at hand to positively identify it.

Myiochanes virens—Wood Pewee.

Common summer resident. Arrives May 6 to 26 and departs September 24 to October 5. Common breeder and home builder throughout the section.

Empidonax flaviventris—YELLOW-BELLIED FLYCATCHER.

Occasional visitant. Observed May 19, 1914, at Hewitt, N. J., and on September 6, 1917, at Warwick Woodlands, N. Y.

Empidonax virescens—ACADIAN FLYCATCHER.

Occasional visitant. Observed at Surprise Lake, May 9, 1916, and at Finigan's Cove on May 12, 1917.

Empidonax trailli alnorum—ALDER FLYCATCHER.

Occasional summer visitant. June 18, 1909, at Mount Peter, N. Y., one was found dead. Another was observed near the dam at Greenwood Lake Glens, N. J., on July 2, 1917.

Empidonax minimus—LEAST FLYCATCHER.

Common summer resident. More plentiful some years than in others, but may be found quite abundantly every year. Arrives April 28 to May 5 and departs September 19 to October 1. Nests in many places about the lake. This bird shows a distinct preference to the wild cherry saplings for nesting sites and of about fifty nests found by the writer during the past fifteen years in this vicinity, sixty per cent were in these trees.

Octocoris alpestris—HORNED LARK.

Occasional autumn and winter visitant. Observed along the Jersey Road on the west side of the lake, both in New Jersey and New York, feeding usually on the manure of the horses which travel this road continually.

Cyanocitta cristata—BLUE JAY.

Common permanent resident. Breeds and nests throughout the section. During the college days the first bird usually to greet the observer is the Blue Jay. I have found them even on days when the temperature was from five to ten degrees below zero just as plentiful as during the seasons of the year when they are naturally expected to be at the heighth of their abundance.

Corvus brachyrhynchos—CROW.

Common permanent resident. Breeds in all the more sparsely settled sections all about the lake. Nests have been located with eggs as early as April 10 and as late as June 15.

Sturnus vulgaris—EUROPEAN STARLING.

Common permanent resident. They first were recorded about this lake on June 18, 1908, and since that time have increased with surprising rapidity every year, plainly indicating this increased abundance. They nest in every conceivable place.

Dolichonyx oryzivorus—BOBOLINK.

Common summer resident. Arrives in early May and departs from September 15 to 30. Common breeder in all the open fields of the farms about the lake.

Molothrus ater—COWBIRD.

Common summer resident. Arrives March 15 to April 5 and depart October 15 to November 1. Their eggs have been found in nests of the Warbling Vireo, Yellow-throated Vireo, Yellow Warbler and Redstart.

Agelaius phœniceus—RED-WINGED BLACKBIRD.

Common summer resident. Arrives March 15 to 30 and departs October 1 to 15. Nests are found each year in the reedy and swampy places about the lake.

Sturnella magna—MEADOWLARK.

Common permanent resident. Breeds and nests throughout the section in old fields and open meadows.

Icterus spurius—ORCHARD ORIOLE.

Common summer resident. Arrives about May 15 and departs September 10 to 15. Nests throughout the section in the larger orchards, which are seldom visited by the inhabitants.

Icterus galbula—BALTIMORE ORIOLE.

Common summer resident. Arrives May 4 to 10 and departs September 15 to October 1. Abundant nest builder throughout the section.

Euphagus carolinus—RUSTY BLACKBIRD.

Common migrant. Appears locally from March 15 to April 10 and from September 19 to October 1.

Quiscalus quiscula—PURPLE GRACKLE.

Common summer resident. Abundant nest builders wherever the conifers abount. Occasionally nests are found in unfrequented orchards.

Quiscalus quiscula aeneus—BRONZED GRACKLE.

Occasional migrant. One male found had been shot near the Ice Houses on the east bank of the lake on May 2, 1915.

Passer domesticus—ENGLISH SPARROW.

Common permanent resident.

Pinicola enucleator leucura—PINE GROSBEAK.

Rare winter visitant. Observed on December 28, 1916, along the Wanaque River near Awosting. There were six birds in this flock, two males and four females. Only record I have for the vicinity.

Carpodacus purpureus—PURPLE FINCH.

An abundant migrant, and occasional winter visitant. Arrives from the south in the spring about April 15 and returns in the fall about September 15. Observed at Beacon's Bend on December 8, 1917, and at Hewitt on December 15, 1917.

Loxia curvirostra minor—RED CROSSBILL.

Rare visitant. Observed at Sterling Forest on May 13, 1916.

Acanthis linaria—REDPOLL.

Rare visitant. Observed twice about the lake. Once at Sterling Forest on December 28, 1917, and at the Brandon House on February 2, 1918.

Astragalinus tristis—GOLDFINCH.

Common permanent resident. Found nesting nearly every year in the open thickets and fruit trees at various points about the lake in both states. The earliest nest which the writer has found of this species was at Awosting on July 25, 1916. The major portion of the nests located were from the middle of August to September 5. During the colder months they rove about in small flocks and may be met with in many portions of this section.

Spinus pinus—PINE SISKIN.

Regular winter visitant, but never very abundant. Arrives from the

north about October 15 and has been seen last in the spring on April 30.

Plectrophenax nivalis—SNOWFLAKE.

Irregular winter visitant. Only present during extreme cold snowy weather, when they are driven south by the scarcity of food in their chosen haunts. Observed February 2, 1910, at the Windemere Hotel, January 18, 1916, at Hewitt, and March 15, 1920, at Deacon's Point.

Poœcetes gramineus—VESPER SPARROW.

Common summer resident. Arrives about March 20 and leaves us about October 15. Breeds every season in the open fields all about the lake.

Passerculus sandwichensis savanna—SAVANNA SPARROW.

Common visitant; irregular summer resident. Found nesting at Awosting on May 30, 1908. Only record. Arrives about April 1 and passes south about September 15.

Ammodramus savannarum australis—GRASSHOPPER SPARROW.

Common summer resident. Arrives about April 30 and departs October 1 to 10. Nests found regularly each year in the old fields.

Zonotrichia leucophrys—WHITE-CROWNED SPARROW.

Rare winter visitant. Most abundant in October and November and in April and May. Wherever the White-throats frequent one must look for this species.

Zonotrichia albicollis—WHITE-THROATED SPARROW.

Common winter visitant. Arrives about September 15 and departs about May 20.

Spizella monticola—TREE SPARROW.

Common winter resident. Arrives from the north about October 15 and leaves again about April 30. This is probably the most frequently met with bird during the winter in this section.

Spizella passerina—CHIPPING SPARROW.

Common summer resident. Appears about March 30 and leaves late in October. Nests in almost every kind of small tree not over fifteen feet up. Particularly prefer the low conifers for nesting sites.

Spizella pusilla—FIELD SPARROW.

Common summer resident. Arrives about March 10 and departs about November 1,. Nests are found each year in the old fields all about the section.

Junco hyemalis—SLATE-COLORED JUNCO.

Common winter resident. Arrives about October 10 and leaves around May 5. Wherever the Tree and Song Sparrows are present one is almost sure to find this species with them.

Melospiza melodia—SONG SPARROW.

Common permanent resident. Abundant breeder all about the lake.

Melospiza georgiana—SWAMP SPARROW.

Common summer resident. Not as abundant as the *Melospiza melodia*, but nests are found regularly in the swamps bordering on Belcher Creek and at the northern end of the lake.

Passerella iliaca—FOX SPARROW.

Common migrant and occasional winter visitant. Arrives from the north about October 1 and passes north again in the spring about March 15. Observed at Surprise Lake on December 15, 1910, and at Hewitt along the Wanaque on February 20, 1918.

Pipilo erythrophthalmus—TOWHEE.

Common summer resident. Arrives about April 1 and departs about October 15. Nests regularly each year all about the vicinity.

Zamelodia ludoviciana—ROSE-BREASTED GROSBEAK.

Common summer resident. Arrives about May 5 and departs October 1 to 10. Nests quite regularly at various points about the lake.

Passerina cyanea—INDIGO BUNTING.

Common summer resident. Arrives about May 8 and leaves September 25 to 30. Nests regularly each year in the low thickets near the likeside.

Piranga erythromelas—SCARLET TANAGER.

Common summer resident. Arrives May 5 and departs October 5. Breeds throughout the district. Prefer the oak trees for nesting sites.

Progne subis—PURPLE MARTIN.

Occasional visitant. Observed at Brown's Hotel on May 15, 1908, and at Greenwood Lake, N. Y., September 4, 1917.

Petrochelidon lunifrons—CLIFF SWALLOW.

Common summer resident. Arrives April 30 and leaves August 25 to September 1. Nests are found quite regularly on the barns in the district and on the ice houses near Sterling Forest.

Hirundo erythrogastra—BARN SWALLOW.

Common summer resident. Arrives about April 10 and leaves early in September. Common breeder throughout district.

Iridoprocne bicolor—TREE SWALLOW.

Common summer resident. Arrives April 5 and leaves about October 25. They doubtlessly nest here as they are present throughout the nesting season, but the writer has never found a nest of this species near the lake.

Riparia riparia—BANK SWALLOW.

Common summer resident. Arrives April 10 and departs September 5 to 10. Nests regularly wherever there are sand banks in the vicinity.

Stelgidopteryx serripenis—ROUGH-WINGED SWALLOW.

Occasional summer visitant. Two pair have been observed quite regularly for a number of years past near the dam of the lake at Greenwood Lake.

Bombycilla garrula—BOHEMIAN WAXWING.

Rare winter visitant. Observed but once. Five were positively identified on January 3, 1919, near Hewitt Station on the Erie Railroad in a wild cherry sapling, where they were perched for about ten minutes.

Bombycilla cedrorum—CEDAR WAXWING.

Common summer resident. Occasional in the winter. Nests quite regularly in the adjacent orchards.

Lanius borealis—NORTHERN SHRIKE.

Occasional winter visitant. Observed at Brown's, Storm Island, and at Greenwood Lake, N. Y.

Lanius ludovicianus migrans—MIGRANT SHRIKE.

Rare migrant. Observed August 20, 1908, at Sterling Forest, and on September 15, 1917, at Belcher Creek. Only single birds in each case.

Vircosylva olivacea—RED-EYED VIREO.

Common summer resident. Arrives May 5 and departs September

36. Nests regularly each year in the wooded sections.

Vireosylva gilva—Warbling Vireo.

Common summer resident. Arrives about May 5 and leaves about September 20. Nests are found occasionally, but not as regularly as the preceding species.

Lanivireo flavifrons—Yellow-throated Vireo.

Common summer resident. Must certainly nest here, but the writer has never found a nest. Arrives April 30 and leaves about September 10.

Lanivireo solitarius—Blue-headed Vireo.

Common summer resident. Nests occasionally in the deeper woods adjacent on the Bellvale and Bearfort hills. But on the east side no nests have been found and but few birds frequent there. Arrives about May 25 and leaves late in September.

Vireo griseus—White-eyed Vireo.

Common summer resident. Arrives May 1 and leaves about September 25. Nests are found quite regularly in the lower growths of the adjacent woodlands.

Mniotilta varia—Black and White Warbler.

Common summer resident. Arrives about April 25 and departs about October 1. Nests are found occasionally in the heavily wooded sections about the lake. In every case these nests were found on the ground at the base of a tree, except in one case, in May, 1910, when the nest was in the side of a decayed tree trunk about a foot from the ground.

Helmitheros vermivorus—Worm-eating Warbler.

Occasional summer resident. Have no record of its nesting here, but believe they do, as pairs have been noted during the breeding season in the Bearforts on three different occasions. Arrives usually about May 5 and leaves September 5 to 8.

Vermivora pinus—Blue-winged Warbler.

Common summer resident. Arrives May 5 and departs about August 25. Have found it nesting on three occasions in the lower portions of the Bellvale Mountains in the low bushes and on the ground at the foot of some bushes.

Vermivora chrysoptera—Golden-winged Warbler.

Rare transient visitant. Only observed by the writer during the migrations and usually only one or two individuals. Passes north May 7 to 16 and again southward about September 1.

Vermivora rubricapilla—Nashville Warbler.

Rather common migrant. Passes north about May 10 and return from the north again in later Septtember. Usually most abundant in overgrown cut-offs.

Vermivora peregrina—Tennessee Warbler.

Rare migrant. Spring migration May 15 to 20 and fall migration about September 10 and 15.

Compsothlypsis americana usneae—Northern Parula Warbler.

Very common during migrations. Spring, May 10 to 20, and fall, late September. Occasionally met with in June and July, so it is fair to assume they breed in the vicinity, but no nests have been located.

Dendroica tigrina—Cape May Warbler.

Rare migrant. Observed at Deacon's Point May 20, 1916, and at Sterling Forest May 15, 1920.

Dendroica aestiva—YELLOW WARBLER.

Common summer resident. Arrives about May 4 and leaves about September 30. This is probably the most common warbler of the section. Nests regularly each year all about the lake.

Dendroica cærulescens—BLACK-THROATED BLUE WARBLER.

Common migrant. Spring migration May 5 to 20 and fall migration September 1 to October 1. Occasionally met with during middle of June in the Bearforts and Bellvales.

Dendroica coronata—MYRTLE WARBLER.

Common migrant. May 1 to 20 in the spring and October 10 to 25 in the fall. Have been seen as early as April 9 and as late as November 5.

Dendroica magnolia—MAGNOLIA WARBLER.

Common migrant. Arrives May 10 to 20 and passes south August 20 to 31. Have observed them as late as June 10 in the Bearforts.

Dendroica pensylvanica—CHESTNUT-SIDED WARBLER.

Common summer resident. Nest regularly each year in this section. Arrives about May 8 and leaves about September 10.

Dendroica castanea—BAY-BREASTED WARBLER.

Rather rare migrant. When present it passes north about May 15 and south about September 1 to 5. Observed in 1914, 1917 and 1921. All records were made in the Bellvale hills.

Dendroica striata—BLACK-POLL WARBLER.

Common migrant. Spring, May 15 to June 1, and fall, September 5 to 30. Can be looked for all about the lake during these periods.

Dendroica fusca—BLACKBURNIAN WARBLER.

Rather common migrant. Arrives about May 6 to 15 and passes south about September 5. The valley of the Wanaque between the Glens and Hewitt is probably the best place to look for this species in this section, although a number have been observed on both sides of the lake in the heavily wooded sections.

Dendroica virens—BLACK-THROATED GREEN WARBLER.

Common migrant. Arrives from the south about May 5 and passes south again about September 15 to 30. Large flocks of this species are observed all about the lake during each migration and they are most often observed in the uppermost branches of the deciduous growths.

Dendroica vigorsi—PINE WARBLER.

Rather rare migrant. Spring migration April 5 to 15 and fall migration October 1 to 5.

Dendroica palmarum—PALM WARBLER.

Rare migrant. Only observed twice: May 6, 1910, at Awosting along the Wanaque, and on May 7, 1918, at Sterling Forest.

Dendroica palmarum hypochrysea—YELLOW PALM WARBLER.

Common migrant. One of the earliest warblers to appear in the section. Arrives April 15 and passes south about October 15.

Dendroica discolor—PRAIRIE WARBLER.

Rather rare migrant. A few individuals are observed each in the spring migration, May 5 to 10.

Seiurus aurocapillus—OVEN-BIRD.

Common summer resident. Arrives about May 1 and departs in early October. Nests regularly, but are very hard to find.

Seirus noveboracensis—WATER-THRUSH.

Common migrant. Arrives in the spring about May 1 and passes south about September 1 to 15. The valley of the Wanaque is an excellent section to observe this species during the migrations.

Seiurus motacilla—LOUISIANA WATER-THRUSH.

Common summer resident. Arrives about April 25 and departs in late August. Must surely nest here, but the writer has never located its home.

Oporornis formosus—KENTUCKY WARBLER.

Rare migrant. Only observed three times in the section: May 10, 1914, at Deacon's Point, Sterling Forest May 5, 1918, and Hewitt's May 10, 1920.

Oporornis agilis—CONNECTICUT WARBLER.

Rare migrant. Only observed once, May 9, 1917, at Sterling Forest.

Oporornis philadelphia—MOURNING WARBLER.

Rare migrant. Observed but twice, May 19, 1920, at Awosting, and May 16, 1921, at Greenwood Lake Glens.

Geothlypis trichas—MARYLAND YELLOW-THROAT.

Common summer resident. Arrives May 1 and departs in early October. Nests abundantly throughout the section in the swampy areas.

Icteria virens—YELLOW-BREASTED CHAT.

Common summer resident. Arrives about May 4 and departs in early September. Nests regularly each year in many parts of this district.

Wilsonia citrina—HOODED WARBLER.

Common summer resident. Arrives about May 5 and departs in early September. Nests are frequently found in secluded spots where there is little chance of their being molested by mankind.

Wilsonia pusilla—WILSON WARBLER.

Common migrant. Arrives about May 15 and passes south in early September.

Wilsonia canadensis—CANADIAN WARBLER.

Common migrant. Spring migration takes place May 8 to 20 and fall migration early September. Individuals are occasionally met with in the spring up to June 10.

Setophaga ruticilla—REDSTART.

Common summer resident. Arrives about May 1 and leaves in late September and early October. Nests rather abundantly throughout the section.

Anthus rubescens—PIPIT.

Common migrant. Arrives from the south April 1 to 20 and passes south in late October.

Dumetella carolinensis—CATBIRD.

Common summer resident. Abundant breeder throughout section. Arrives in the spring in late April and departs in early October.

Toxostoma rufum—BROWN THRASHER.

Common summer resident. Arrives about April 5 to 10 and departs in late October. Nests regularly each year throughout the section.

Troglodytes aëdon—HOUSE WREN.

Common summer resident. Arrives about April 27 and departs in late September. Nests abundantly throughout the district.

Nannus hiemalis—WINTER WREN.

Winter resident. Rather eccentric in its occurrence. Some years only a few individuals are observed, whereas during others they are quite numerous.

Telmatodytes palustris—Long-billed Marsh Wren.

Common summer resident in Blecher Creek Swamp, but this is the only place they are to be found in this section with any regularity.

Cistothorus stellaris—Short-billed Marsh Wren.

Common summer resident in Belcher Creek Swamp and at other swampy areas in the section. More often met with than the preceding species.

Certhia familiaris americana—Brown Creeper.

Rather common winter resident and occasionally met with in the summer months. Observed during five successive summers in the Bellvales from 1915 to 1919, records being made in late June and early July.

Sitta carolinensis—White-breasted Nuthatch.

Common permanent resident. More frequent in the fall and winter months. Must breed, but have no record of finding its nest in the section.

Sitta canadensis—Red-breasted Nuthatch.

Occasional visitant. Observed quite regularly during the winter months and as late as June 3 in the spring.

Penthestes atricapillus—Black-capped Chickadee.

Common permanent resident. More abundant in the fall and winter months than the other portions of the year. Two nests have been located, one near Surprise late in May, 1916, and one at Bear Rock on June 1, 1919.

Regulus satrapa—Golden-crowned Kinglet.

Common migrant and rather common winter resident. Arrives from the north about October 1 and leaves in early April.

Regulus calendula—Ruby-crowned Kinglet.

Common migrant. Passes north in early May and south in October and early November.

Hylocichla mustelina—Wood Thrush.

Common summer resident. Arrives about May 1 and leaves in early October. Nests abundantly throughout the district.

Hylocichla fuscescens—Wilson Thrush.

Common summer resident. Arrives in the spring in late April and leaves in early September. Nests quite frequently are found in the heavily wooded sections.

Hylocichla aliciæ—Grey-cheeked Thrush.

Common migrant. Spring, May 1 to 10, and fall, early October.

Hylocichla ustulata swainsoni—Olive-backed Thrush.

Common migrant. Spring, May 5 to 15, and fall, early October.

Hylocichla guttata pallasi—Hermit Thrush.

Common migrant and occasional summer and winter resident. On May 27, 1910, a nest just completed was found in the Bearfort Hills west of Greenwood Lake, and on June 10 this nest contained four young about five days old.

Planesticus migratorius—Robin.

Common summer resident. Arrives early in March and leaves in late November. Abundant breeder throughout district.

Sialia sialis—BLUEBIRD.

Common permanent resident. Nests throughout section.

The migration notes in the foregoing list are based on a tabulation covering a period of sixteen years and the general aeverages are shown in each case.

SOME IOWA OWL NOTES

BY FRED J. PIERCE, WINTHROP, IOWA

The Screech Owl is the commonest representative of the Owl family in this region, and is undoubtedly of extreme value to the farmer as a pest destroyer. He is seldom seen in the hours of the day, but at night makes his presence known by his wavering, mournful cry, which is pleasing music to the ear of a professed lover of nature. Why anyone should think this weird and gripping voice from the night disagreeable is hard to understand, yet many people do. Retiring in habit, this bird seems to have few objectionable qualities, and is, therefore, a neighbor to be encouraged, rather than one to be shunned.

Some time ago I described the effective work done by a Screech Owl in ridding our farm buildings of English Sparrows during the winter of 1919-20.* During the past winter (1921-22) similar work was done by an industrious and not too timid Owl—perhaps the previous visitant.

This Screech Owl was first seen in the large mow of our barn, after a severe snowstorm in mid-December, and it visited it frequently thereafter. The Sparrows' numerous roosting-places in the haymow and nearby silo chute were no longer safe and, judging from the small size of our English Sparrow flock, the Owl's appetite for Sparrows was a very hearty one.

For several years the ladder rungs inside the silo chute have been a preferred reposing quarter of the Sparrows. When not molested a hundred or so would congregate there to spend the night. My father and I have often gone there after dark and killed numbers of them by climbing the steps and knocking them over with a club, while a lantern was held below to bewilder them with the light. It was fairly easy to dispatch the birds with a well directed blow. In former winters we have used these means to keep the Sparrow flock reduced, but the past winter the Screech Owl included the chute in his list of hunting grounds and the Sparrows were left little cover. A

* The Screech Owl as a Sparrow trap. *Bird-Lore*, Nov.-Dec. 1920, p. 350.

broken window pane made the chute easy of entrance. Another of the Sparrows' haunts is our chicken house. One morning, upon entering this building, we found the Owl there, flying about over the chickens' heads and causing the greatest of confusion, apparently frightening himself fully as much as he was terrorizing the chicken population. He finally collected his wits and escaped through an open window.

The late Dr. Bert Heald Bailey, in his "Raptorial Birds of Iowa" (1918), said that the Screech Owl's "food consists very largely of mice; although sometimes small birds are taken, especially the English Sparrow and Blue Jay." Is it not possible that the Screech Owl catches a few native Sparrows, or can it discriminate between the English and American species?

One afternoon in January (1922) I heard a company of Crows making a great din in a wood close at hand, and, thinking I might catch sight of a Hawk or Owl which was being "mobbed," I followed the flight line taken by Crows which were hastening to the scene of excitement. As I approached, the Crows departed, and I found a Barred Owl jumping from branch to branch in the tops of some conifers, trying to keep one eye on the fleeing Crows and the other on me. He did not leave, however, probably taking me as the less of two evils, and soon settled in a tree over my head.

The Owl's back was toward me when he became quiet and I wished to get a better look at his face; he did not seem at all inclined to turn around, either. Soon I imitated the Screech Owl's wavering whistle, thinking I could perhaps make him turn around. A moment later, by chance, I dropped my eyes to a lower plane and I was *greatly* astonished to see a Screech Owl eyeing me from a branch a few yards away and only a little higher than my head, as if to say, "That was a poor imitation, Pierce—you need some lessons." How he came to be there I can but conjecture. He must have flown there when he heard my whistle, although the flapping of his wings did not catch my eye. If he had been sitting on the limb when I came I think I should have seen him, although his plumage (red) and the bark of the tamarack did much to conceal him. Both of the Owls were well camouflaged when sitting directly in front of the tree trunks, and after looking away it was hard to pick their outlines from the bark. The ground was covered with icy snow and the bright sun shining upon it produced a blinding effect. The Screech Owl's eyes were narrowed to mere slits.

In a little while the Screech Owl flew to a dead tamarack, the upper half of which was broken off and gone. This trunk is filled with holes and cavities made by Flickers and Red-headed Woodpeckers year after year, and into one of these the Owl disappeared. Probably one or more of these cavities form the quarters of him and his mate—if he has one.

This tract of trees is evidently the year-around home for at least one pair of Screech Owls, for nearly every summer the young can be seen there. Watching the rows of half grown youngsters perched on some branch in this tract in the spring months has furnished me considerable amusement. They are so serious looking and apparently motionless except when they turn their heads completely around to stare at one from behind. In this ludicrous position one might imagine that Mother Nature had put their heads on backward. The parent Owls are usually near their young when they are out on these "airings." Occasionally, when one goes into the woods at dusk in the late spring evenings he is reminded of the presence of a Screech Owl brood by the old ones swooping down at him and uttering peculiar noises as they glide by his head. On these occasions the Screech Owl displays an amount of aggressiveness I have not found in his nature at other times. On many nights, in the summer or fall, Screech Owls have come and perched on the roof of our house or sat in the eave troughs, where they give their calls, as if they were somewhere deep in the woods.

The occurrence of the Barred Owl, in the immediate vicinity of Winthrop, is rather rare, but this is doubtless due to the lack of any dense timber within several miles. I usually make one record of this species each year, but not oftener.

My first record of the Barn Owl is April 13, 1922. That morning, when I went into the silo to throw down the supply of ensilage for the day, I found the Barn Owl sitting on one of the timbers which support the roof, about twenty feet above me. Although considerably alarmed at my noisy work below, the Owl did not fly out, but perhaps this was because it could not find the place where it had entered. The bird remained there all day; a pair of pigeons which had their nest inside were afraid to come into the silo. According to Anderson's "Birds of Iowa" (1907), the Barn Owl "very rarely appears north of the middle line of the state."

March-April, 1922.

NESTING HABITS OF A GREAT HORNED OWL

O. J. MURIE, FAIRBANKS, ALASKA

For a number of years I had known that a pair of Great Horned Owls had a nest in a patch of heavy woods about four miles south of Moorhead, Minn., but I had never had the time to hunt it up.

In the spring of 1920 I determined to find it. April 15 was the first opportunity I had to spend much time in that locality. On that day I began searching the woods, tacking back and forth, watching closely for any suspicious behavior of the owls. The woods are composed principally of elms, some of them of considerable size, boxelder, a stray cottonwood on the bank of the Red River, a good many basswoods, and here and there a grove of white oak. In the edge of the woods were frequent plum thickets. This type of woods extends in a comparatively narrow belt along the banks of the Red River, with the cultivated prairie extended away in the distance on either side.

Presently an owl flew away before me, from tree to tree, and after a little, hooted. I flushed it several times, endeavoring to learn from its actions in which direction it had the nest. I changed direction a number of times and once it performed in a manner clearly meant to entice me away. It lowered its head and glared at me from its distant perch. Then, extending its wings, it commenced to wobble and flutter on the limb as if it were about to fall. I moved toward it and it flew on, and as I continued in that direction the bird became quiet. I therefore returned to the locality where the owl had performed, and presently found two owl feathers on the ground. I heard the owl hooting, and glancing up in a big elm, spied an owl's tail projecting over the edge of a broken stub. The first owl now became greatly excited, came much nearer and repeated the previous performance, apparently having great difficulty retaining its balance, with elaborate flapping and swaying to keep on its perch, in a very realistic manner. I left without disturbing the brooding bird, intending to return later to secure photographs.

On the 18th I returned to the nest, to find a flock of crows worrying one of the owls. While climbing a small tree nearby, with the camera, the brooding owl flew off and the crows promptly attacked it. Neither of the owls, however, paid much attention to the crows this time, but watched me intently, utter-

ing irregular, strange hoots, differing from the usual, characteristic call of this bird. Upon climbing to the nest, about fifteen feet from the ground, I found a shallow depression in the stub of a big limb, in which lay three owlets. As usual there were three sizes, the largest about twice the size of the smallest. The runt was downy, but the other two were beginning to get their feathers. Around the little owls lay five large Brown Rats, a a field mouse (*Microtus pennsylvanicus*) and a Least Weasel (*Rixosus*). The head and sometimes the shoulders were eaten off all these animals except the weasel, which was intact and made a good specimen in my mammal collection.

April 24 I again went to the nest. The owls were much concerned and ventured quite near. As I was climbing to the nest, on a slender pole, I received a heavy blow on the side of the head and my hat flew off. This actual attack on the part of the owl was unexpected and I slid to the ground for my hat, before continuing the climb. I found one ear bleeding. I watched the owls carefully as I climbed the second time. In the nest were two brown rats, beheaded, and the hind quarters of a cotton tail. The parent birds continued hooting, snapping their beaks and swooping near me.

April 25 I found two brown rats in the nest, without heads, The young were brought to the ground and photographed.

May 10 I found a leg and some flesh of a female Mallard, possibly a tame duck from a farm near by. The young owls were becoming yellowish brown.

May 15 I found an owlet perched on a projection above the nest-cavity. The parents were quite warlike. I climbed to the nest and stooped to look into the cavity when I received a stunning blow in the back of the neck. For a brief instant I felt slightly dazed. I found six punctures in the skin bleeding. I had never thought there would be such weight behind a blow from an owl. The bird swooped at me again, but I was on watch after that and a wave of the hand was enough to turn the bird aside. Again I found two rats in the nest, one of them melanistic. The young owls were brought to the ground and photographed again.

May 16 I found two of the owlets perching above the cavity and one of them fluttered to the ground.

May 23 all the birds had left the nest, and after a little search, the three young owls were discovered in various trees near by. After this date I saw no more of them.

The owl's nest was not tidy. There was no indication of any nesting material or lining, but the cavity was littered with bits of fur, bones and miscellaneous matter in various stages of decomposition, with an unpleasant odor.

NESTING OF THE SANDHILL CRANE, WARNER VALLEY, OREGON

BY DR. A. G. PRILL, SCIO, OREGON

During my visit to this region in May and June of this year I was fortunate in locating the nest of a number of Sandhill Cranes. Nests of this species are by no means common, and require days of traveling through the marshes, and overflow meadows of the valley, to locate them.

The region covered in my investigation, coveted an area of 36 miles long by from 5 to 10 miles wide, or about 180 square miles.

Ten pairs of Sandhill Cranes were nesting in this territory, which would mean about one pair of birds to every 18 square miles of territory.

Warner Valley has some half dozen lakes, surrounded by tules and flags, and wild meadow lands, all of which is covered with water, but here and there small islands were found, which were always above high water.

The places selected for the nest of this Crane were generally several miles out in the marshes, and the nests located were all on the top of large masses of dried tules and flags, and grass, which had undoubtedly been piled up in this manner the year previous in harvesting the hay crop.

These masses were generally 5 feet in diameter and at least 12 inches above high water mark, and in the center a slight depression is made upon which the two eggs or young are found. The nesting dates are from May 20 to June 10. Eggs found May 30 were about half incubated.

A nest of young found on June 6, containing two young, which were about ten days old, were very spry, but did not seem much alarmed at being handled. They posed readily for the camera and several fine views were secured.

The young at this time were covered mostly with down and were a beautiful silky brown in color, and were just beginning to show the formation of feathers.

At all times, when near the nests, the parent birds keep at a safe distance of several hundred yards and were very hard to approach under any circumstances.

The female kept up a constant call to her young while anyone was near the nest, and this peculiar call of the Sandhill Crane can be heard for miles.

No nest containing more than two eggs or young were found. Residents of the valley told me of the peculiar habit of the birds that when the young reached a certain stage they become

Eggs of the Sandhill Crane

very quarrelsome, to such an extent that their fights result in the death of one or the other of the young and at this time the parent birds separate the young, the male taking charge of one and the female the other, and that thereafter they are not found

together again. I am not able to verify this statement, as all nests found had eggs or young birds only a few days old.

The measurements of the eggs, taken from a typical set, are as follows: 3.75x2.25 and 3.875x2.00.

They are beautiful Oological specimens and the coloring is difficult to describe.

Upon a ground color of buffy cream are blotches, spots and specks of soft shades of brown and lavender, quite heavy and confluent at the larger end.

Two Young, Ten Days Old, Sandhill Cranes

ANNUAL MEETING OF THE AMERICAN ORNITHOLOGISTS UNION AND THE WILSON ORNITHOLOGICAL CLUB AT CHICAGO IN OCTOBER

Chicago, during the week of October 23rd, will be the gathering place of what is expected to be the greatest meeting of bird men ever held in the great interior region. At that time the American Ornithologists Union will hold its first meeting in the Mississippi Valley and, with the exception of one held in California, the first to be held west of Washington.

The officials of The Union have been under pressure and invitation of western ornithologists for some years to hold a meeting at Chicago, and the coming one is a result of renewed invitations on the part of The Wilson Ornithological Club, The Field Museum, The Chicago Ornithological Society, The Illinois Audubon Society and mid-western members of The A. O. U. As chief host, The Wilson Club will hold only a business meeting and will fuse its usual program features into the program of its guest. All courtesies and coöperation possible will be extended by the latter club to make the meeting a notable one and to make the trip well worth while for members coming from a distance. The business meeting of the W. O. C. will be held on the evening of Tuesday, the 24th, and this will constitute the only official session of that organization. The business meeting of the A. O. U. will be held on Monday evening, the 23rd, and the public sessions will follow on Tuesday, Wednesday and Thursday.

A local committee of Chicago men has been appointed to make arrangements and consists of Messrs. Wilfred H. Osgood (Ch.), Percival Brooks Coffin, Ruthven Deane, O. M. Schantz and R. M. Strong. These gentlemen, it is learned, have already scheduled a number of interesting features aside from the program, including the annual dinner, a trip to the unique Sand Dune area on the shore of Lake Michigan, and various optional trips during the latter part of the week. The magnificent new Field Museum of Natural History, on the lake front, will be the place of meeting, and the fine collections displayed therein will be of great interest. The Chicago Academy of Science collections in their museum in Lincoln Park, feature the avifauna of the Chicago area, and these groups are considered models of their kind. The Crerar Scientific Library is particularly rich

in its collection of books and journals pertaining to ornithology and will afford opportunity to visitors to look up many otherwise inaccessible references. As a city, Chicago is a favorite one for conventions and holds much of general interest to the visitor.

A feature of the meeting will be an exhibit of paintings, drawings and photographic studies of birds. The local committee invites correspondence, from those who have meritorious material of the kind, for loan under terms which will guarantee their safe return and without expense. The program is now in process of formation and titles of papers should be sent without delay to Secretary Palmer of The A. O. U. or to Secretary Ganier of The W. O. C.

Bird men from both coasts, the Rocky Mountains, and Canada are expecting to attend and we are urging upon our membership a very full attendance from the central area.

A. F. G.

THE WILSON BULLETIN

Published at Oberlin, Ohio, by the Wilson Ornithological Club.

Official Organ of the Wilson Ornithological Club and the Nebraska Ornithological Union (in affiliation).

Price in the United States, Canada and Mexico, $1 50 a year, 50c a number, post paid. Price in all countries in the International Union, $2.00 a year, 60c a number. Subscriptions should be sent to Geo. L. Fordyce, Youngstown, Ohio.

EDITORIAL

We earnestly hope that the call of the Secretary to the Annual Meeting will meet with a hearty response from every quarter. To many of our members this will afford the first opportunity to meet and become acquainted with men of national reputation whom you have known only by name hitherto. It is a good thing for all of us to have this personal touch with workers in the same field. There is a certain stimulus in just meeting and speaking with those whose interests are similar to yours. And as hosts to the American Ornithologists' Union we owe it to them and to ourselves to be present and to participate in the program as we are able. And we owe ourselves a short vacation. This is the time to "liquidate."

The Bird Banders have evidently put in good time and effort this summer. We are more than pleased that so many have gone into this phase of the work. The results of the work will increase in value in a geometrical ratio to the numbers of workers, where stations are so placed that they are in the line of usual movement. Something of the smaller and more local movements will be learned as the work progresses. Mr. Baldwin's contribution to the domestic life of the house wren is a notable example of what may be expected in that phase of banding operations alone. Not the least value of such results is that they are accurate, not assumption. Let the good work go on and the ranks increase.

The editor completed his fourth excursion from Oberlin to the Pacific Ocean with a class of students, using Ford cars as conveyances, last summer. We did not get the Arctic-Alpine nor the Tropical birds on this trip, but we were in all of the other zones, as well as in all of the other ecological formations. The trip took us through Ohio, Indiana, Illinois, Wisconsin, Iowa, South Dakota, Wyoming, Montana, Idaho, Utah, Nevada and California, including a visit to the Black Hills, Yellowstone Park, Bryce's and Little Zion Canyons and Cedar Breaks in Utah, and ten days on the ocean beach near Los Angeles. It was the most successful trip thus far in some ways. There was almost no car trouble, and very few punctures even, and no even near-accidents—that we were aware of. Either the Fords are getting better all the time or else we are learning better how to handle them; perhaps both. At any rate, 200 miles in a full day's drive was easy to cover, and twice over 300 miles was the day's run. We did not drive long hours, but merely kept going at a good pace. As an outing, a trip of this sort, with congenial people, can hardly be beaten.

BIRD BANDING DEPARTMENT

Under the Direction of Wm. I. Lyon, Waukegan, Ill.

WANTED—More Bird Banders, anywhere, everywhere. If you cannot be one yourself make it your duty to catch and tag someone else.

The possibilities of Bird Banding are limitless. It is by far the most fascinating sort of bird-study imaginable. The contributions it can make to the scientific knowledge of birds are of inestimable value. The work is within the reach of all, or at least of all who have a suitable location for a trap; it involves but little expense and requires no great experience and little ornithological knowledge.

The results will increase in geometrical progression as the number of bird-banders increase. And we may confidently expect that more people will actively take up the work as its possibilities become better understood.

R. L. Talbot.

509 Audubon Road,
Boston, Mass.

NOTES FROM SAULT STE. MARIE

My banding experience this far has been partly good and partly bad, the bad largely due to lack of time.

I have had a flock of Evening Grosbeaks (*Hesperiphona vespertina vespertina*) regularly at my feeding station every winter since the winter of 1915-16. Last year the first of the flock arrived August 24, numbered 35 to 40, the last two leaving May 25. For some reason the birds were very scary so I did not try to band any until early in March. I had no success. The birds did not mind the trap at all, perched all over it, pecked all around it and in the entrance, but would not go in. Only one bird got into the trap and that was one day when I was out of town, so it was let go without banding. I have had a drop trap made and hope to have better success when the flock returns.

Dr. Christofferson, my associate in bird work, and myself have again located the Evening Grosbeaks in the eastern part of the Upper Peninsula of Michigan in summer. The first reports of the birds being here in summer came to us in 1920. On investigation we found the reports correct. We checked the birds in the same localities last year and again this year. The nearest point to the Soo is about 35 miles to the west.

A colony of Common Tern (*Sterna hirundo*) nest every year on a low lying island in Munuscong Bay, 25 miles southeast of the Soo.

In 1920 we visited the island, May 29, and found 52 nests, 86 eggs; June 24, 72 nests, 28 young, 148 eggs; 1921, May 28, 105 nests, 234 eggs; June 16, 1922, 15 eggs, all young out of nests; May 28, 39 nests, 75 eggs.

The nests were more scattered than usual, probably because the birds had been disturbed. We found the shells of over two dozen eggs near a camp fire.

As on June 24, 1920, there were young just hatched and eggs in the

nests. Our visit of June 26, last year, was made with the intention of banding the young, but the birds were gone. This year we went earlier, June 18, but again we were too late. However, this visit was not without results. May 28 we found quite an elaborate Herring Gull (*Larus argentatus*) nest on the top of a washed up stump. Three eggs were in the nest. June 18 the nest contained one young Gull and one egg. We banded the young Gull.

When down on the first trip we saw ten Black Tern (*Hydrochelidon nigra surinamensis*) flying. Looked for nests but there were none. June 18 we located five nests, all on floating mats of reeds and very crude affairs, at most but the pulling together of a few pieces of reed.

1 nest, 2 young and 1 egg

2 nests, 3 eggs

2 nests, 2 eggs

We also found two nests, Sora Rail (*Porzana carolina*). One with one egg, the other with ten.

A Least Bittern (*Ixobrychus exilis*) nest with five eggs.

Nine Red-winged Blackbird (*Agelaius phœniceus phœniceus*) nests. One with two young, two with four eggs, two with three eggs, one with two eggs, one with one egg, and two just completed with no eggs.

Two pairs of Black Duck (*Anas rubripes*) and a pair of American Bittern (*Botaurus lentiginosus*) were around and nesting, but we could not locate the nests.

We also saw three Red-backed Sandpipers (*Pelidna alpina sakhalina*), the first we have seen in this locality for over twenty years.

A pair of Bonaparte's Gulls (*Larus philadelphia*) were flying around the island May 28 and 29, but had evidently proceeded on their journey north. They were not around June 18.

My list of birds banded thus far this year is as follows:

Cedar Waxwing (*Bombycilla cedrorum*)—One young just out of nest.

Herring Gull (*Larus argentatus*)—One fledgling.

Killdeer (*Oxyechus vociferus*)—One young.

Pine Siskin (*Spinus pinus*)—Three, two old and one young.

White-throated Sparrow (*Zonotrichia albicollis*)—Eight.

Slate-colored Junco (*Junco hyemalis hyemalis*)—Thirteen.

Song Sparrow (*Melospiza melodia melodia*)—Fifteen.

Purple Finch (*Carpodacus purpureus purpureus*)—One hundred and eighteen.

One repeat on ten Purple Finch, two Song Sparrows, one Slate-colored Junco, one White-throated Sparrow.

Two repeats on six Purple Finch and one Song Sparrow.

Three repeats on two Purple Finch.

I would have done better but ran out of bands May 4 just as the White-throated Sparrow migration was well under way, and did not get a new supply until June 25. I again ran out July 18, but started again July 22, cutting down No. 3 bands, which I find work quite satisfactorily. I fortunately had a supply of the No. 3 on hand, gotten in expectation of banding the young Common Tern.

Running out of bands had one advantage. For four or five days after I ran out, May 4, banded Purple Finch were in and out of my win-

dow feeding box regularly. I then noticed there were no banded birds coming in to feed, nor have I since had a single repeat on any of these numbers. Evidently the first Purple Finch to arrive moved on and were not the ones here through the summer and nesting

I have trapped and killed a large number of English Sparrows, kept tab for four weeks, June 21 to July 19, number 331. They were almost all young birds and females; got only three old ones in the lot.

A Purple Finch acts very differently from an English Sparrow when trapped. The Sparrow has one eye on you and the other is looking for a means of escape. If in the outer part of trap as you approach it almost at once finds the hole and is in the back end of the trap. A Purple Finch in the outer part of trap is so busy keeping it's eyes on you that it never sees the hole and sometimes it is almost impossible to get it to go through. In fact, if there is only one Finch in the outer part, I very often lift the trap and catch it in my hand. An English Sparrow would be out almost the moment you lifted the edge of the trap from the ground. Another difference I noted is that a Finch keeps flying back and forth, particularly around the top half of the trap, which is not protected with fine mesh screen, and, if in the trap any length of time, frequently knocks the skin off above the bill until the base of the upper bill is raw. I have yet to find an English Sparrow with a raw or bloody bill.

Usually I band morning and evening, as I seldom get home for lunch. Although I always open the back door of each trap, when I leave in the morning, I frequently find Purple Finch in the traps when I return. They get in the outer compartment, but do not find their way through the hole to the rear where the door is open.

If my supply of bands doesn't run out again I hope to do better for the balance of the year than I have done thus far.

The Juncos and White-throats always go through in force, both spring and fall, and I have always had large flocks call as they are passing through, in addition to those that nest in this locality.

I am running two traps, one a regular bander's trap with openings large enough to admit birds the size of the Evening Grosbeak. The other a regular Sparrow trap with fine mesh screen around the lower half When I found the Purple Finch had so much trouble in finding the hole into the back compartment, particularly of this trap, I took it to a tin shop and had the hole enlarged, also the entrance, as I found, except the English Sparrow, I got more birds in the bander's trap than in the Sparrow trap.

Sault Ste. Marie, Mich. M. J. Magee.
July 28, 1922.

Note.—We banded about twenty-five Purple Finch at Waukegan just before they went north. We also were interested in their fighting ability. They were so ready to fight, in fact, that they would keep it up after we had opened our hand, apparently more interested in fighting than in escaping, and frequently when one secured a good hold on our finger he could be lifted up clear of the hand, where it would hang quite an instant before it would realize it was free. We tried to obtain a picture of one in that position but did not succeed.

Sault Ste. Marie and Waukegan Purple Finch records show the need of more banders along the lake shore between these stations, so that there would be a chance for concentrated work on this species. If you know of any bird workers anywhere on the shores of Lake Michigan try to interest them in helping this district get started.

Dr. Landsborough Thompson's article in the July, 1921, "Ibis" criticized the "promiscuous ringing" method of placing bands, saying that the work would be more valuable if the various banders would concentrate all their efforts on a few especially worthwhile species and would not band all birds.

This article brought forth a great deal of protest in the March, 1922, "British Birds." The protests pointed out that the "promiscuous ringing" method, which is the method used in the United States, creates more interest among the collaborators and is consequently responsible for the placing of a larger number of bands than would be placed under any other system.

The same issue gives the total results of their "marking scheme," both for the year of 1921 and for the whole period of their existence, 1909 to 1921. The 1921 summary shows a total of 8997 rings (bands) placed, while the grand total is 105,435. Mr. A. Mayall heads the list for 1921 with a record of 1408, while two close seconds are credited with over 1000 apiece.

Mr. L. R. Talbot's article in the July, 1922, "Auk" proves how the contageous effect of Bird Banding is liable to act on a person. He was changed from a novice to a veteran in less than thirty days and now he is convicted for life.

Mr. S. Prentiss Baldwin was unable to go to his usual trapping station at Thomasville, Ga., this year, so Mr. Talbot went there to carry on that very important work. In thirty days he had placed 313 bands, taken 43 returns, and including repeats, had handled a total of 1804 birds, covering seventeen species, as follows: 258 Chipping Sparrows, 12 Cardinals, 7 White-throated Sparrows, 5 Juncos, 5 White-eyed Towhees, 4 Blue Jays, 4 Florida Blue Jays, 4 Brown Thrashers, 2 Field Sparrows, 2 Towhees, 2 Red-bellied Woodpeckers, 1 Mourning Dove, 1 Hermit Thrush, 1 Myrtle Warbler, 1 Palm Warbler, 1 Song Sparrow. Returns, 29 Chipping Sparrows, 5 Brown Thrashers, 4 Cardinals, 3 White-throated Sparrows, 1 Blue Jay and 1 Myrtle Warbler.

Of the return records, by far the most interesting and most important is that of a Brown Thrasher banded by Mr. Baldwin in 1915, and taken again in 1916, 1917, 1920, 1921 and in 1922.

The "Auk" of July, 1922, has an interesting article by F. C. Lincoln on "Trapping Ducks for Banding Purposes," covering the work of Mr. H. S. Osler of Toronto, in his activities on Lake Scugog, which is about sixteen miles north of Lake Ontario.

During the autumns of 1920 and 1921 Mr. Osler trapped 600 ducks, covering four species, from which there have been some interesting returns.

Probably the most interesting case among Mr. Osler's duck records is that of a Blue-winged Teal, No. 4576. This little duck was banded on September 24 in company with another of its own kind and eight or ten Black Ducks. Two months and seven days later it was killed by a hunter in the Caroni Swamp, near Port of Spain, Island of Trinidad. The flight made by the bird must have been close to 3,000 miles.

For many years it had been known that some of the Blue-winged Teals and certain other ducks that breed in North America wintered in South America. The presence of this species on the Island of Trinidad had been particularly noted, but there had been no information available to show from what part of the northern continent the birds came.

The record of this individual is, therefore, of decided interest and value. The band was returned to the U. S. Biological Survey by the American Consul through the State Department.

Trapping during the nesting season has again demonstrated the efficiency of the flat traps, and it brings to mind some of the early work with them at Waukegan, Illinois. The first all-wire trap was made about twelve inches high and almost at once the birds began to injure their heads by jumping up against the wire. The trap was, therefore, cut down to four inches, a height which proved to be just right, and which is still used in all our traps.

A good trapper is always changing or renewing his bait, for the same rule applies to birds as to animals, and one must be constantly on the watch to keep the bait or lure tempting.

In the case of birds you must frequently scrape the ground clean under the traps and begin anew. We clean the ground or floors at least once a week, using a sharp hoe and a large knife, cutting all the grass very short near the trap.

It is necessary to clean oftener in rainy seasons, as the bread and crackers sour, the fruits decay, and the grains and seeds sprout closely together and become sour and moldy.

Another trapping rule is to change the kind of bait. Change from white bread to graham crackers to corn bread well sweetened. In winter fried cakes are very good, chickadees being fond of them.

Sunflower seeds bring many birds in fall and winter, but our summer birds are not fond of them, and they sprout and sour quickly.

In fall cut pears are good, but should be renewed daily.

Mulberries are very good in season.

Cranberries are bright and attractive and keep well in cold weather, making a very good winter bait.

Coral berries or Indian currants make a good bait in winter also. They worked especially well for us in attracting Purple Finch.

The principle bait after all, however, is Perserverance and constant watchfulness.

BIRD-BANDING ON BONAVENTURE ISLAND

As a member of an expedition from the Milwaukee Public Museum the writer spent the month of July, 1922, on Bonaventure Island, one of the Canadian Government's great Bird Sanctuaries, in the Gulf of St. Lawrence. Very little time was available for bird banding, but a short account of what was done and of the possibilities of this work here may prove of interest.

Gannets and Murres nest by the thousands on the great cliffs of this island, on ledges that may be easily reached by the use of ropes from above. Razorbill Auks, Puffins, Black Guillemots, Herring Gulls and Kittiwakes also occur in large numbers as well.

The writer placed over two hundred bands on young Gannets, only those with the tarsus as large or larger than in the adult being banded. The large young, though still in the nest and covered with down, have large fleshy legs, considerably larger than their parents. In such cases the bands should fit snugly so that they will not be too loose when the bird becomes adult.

The following methods were found the quickest and most satisfactory. Fifty of the large size Flat-strip bands were cut to approximately the proper length and the numbers entered in a small note-book. Then they were shaped around the index finger and opened to allow them to slip on readily. Filling convenient pockets with the prepared bands and equipped with sharp-nosed pliers and small cutters we are ready to start work.

It may be stated right here that great care and proper judgment must be used to prevent the young Gannets falling off the ledges. Choosing ledges of medium width and working along them from the outside rather than along the rock, moving deliberately and spending no more time in one spot than is absolutely necessary to properly adjust the band, scores may be banded without a single one coming to grief.

Most of the young stick to the nest, prepared for battle and their sharp, powerful beaks inflict many scratches and wounds on the hands. Some might prefer to use gloves, but the bands can be fitted faster and more accurately with the bare hands. Making a feint with the foot to attract the victim's attention he is quickly grasped by the back of the head and thrust between the legs, head to the rear. The band is now quickly adjusted and the bird released almost before he has had time to realize what has happened. True, he has pecked desperately at the seat of the bander's trousers, and perhaps coughed up a mackerel or two meanwhile, but no damage is done. The bander should possess a strong stomach and when the ledges are slippery after a rain, be dressed in oil-skins from head to foot. After the day's work is done the accumulation of red clay, guano, and half digested fish can be washed off. Occasionally, as one works along the ledge, an adult refuses to desert her offspring, when she also may be put through the mill, care being used to avoid her dangerous bill.

Adult Murres and Gannets can be netted easily with an ordinary long-handled net and in this way the most valuable work could be done.

In fact the banding possibilities in such a colony are almost endless, but the work should only be entrusted to persons having the interest of the birds at heart. Adults must not be kept from their young more than a few minutes at a time, and no banding should be attempted on cold, wet days. Unnecessary walking too and fro on the ledges should also be avoided.

William Duval, descendant of the original owner of the Island, is Honorary Game Warden, representing the Government on the Sanctuary. He is well informed as to the proper approaches to all ledges where the various species nest and may be secured as guide by visiting Ornithologists and bird lovers. Recently Mr. Duval has taken up bird banding and expects to carry on the work there and watch for returns. Birds wearing bands can subsequently be captured and examined. This should be especially true of the Gannets as their bands could be noticed as they stand on the ledges.

Much can be learned by banding in these great sea bird colonies. Whether they nest on the same ledges year after year, how great an age they attain, how far they roam in winter, and whether they mate for life, are a few of the things to be learned. And who knows? perhaps the status of the Ringed Murre, which occurs in fair numbers here, may finally be cleared up in this manner.

Anyone desiring to band birds in Canada should first communicate with the Dominion Parks Branch, Department of the Interior, Ottawa, Canada, in regard to permits. Mr. Hoyes Lloyd, who is charged with the enforcement of the Migratory Bird Treaty there, is an enthusiastic bird bander, and has placed many bands in Ottawa and vicinity this past summer.

H. L. Stoddard

Public Museum, Milwaukee, Wis.

NOTES—HERE AND THERE

Conducted by the Secretary

President T. L. Hankinson, of The Wilson Club, spent part of the months of August and September in North Dakota, at the Biological Station on Devil's Lake. Professor Hankinson is making some studies for the North Dakota Natural History Survey.

The yearbook for 1921 of the Milwaukee Public Museum is at hand and is replete with interesting articles throughout its 100 pages. Articles on collecting trips for birds and bird group material are included, from the pens of Messrs. Herbert L. Stoddard and George Shrosbree of the museum staff. A number of photographs illustrate the nesting of the Duck Hawk, Double-crested Cormorant, and Great Blue Heron, in Wisconsin.

Revised articles of agreement have been concluded between The Wilson Ornithological Club and The Nebraska Ornithologists' Union. The original affiliation, which was consummated in 1915, has been revised to conform to the recent increase in dues.

Rev. W. F. Henninger has immigrated to Brazil from his former home at New Bremen, Ohio. Rev. Henninger is located at Cachoeira in the State of Rio Grande do Sul and will doubtless experience much pleasure in becoming acquainted with a new avifauna.

Bird-Lore for July-August, reviews The Wilson Bulletin with pleasant commendation on its improved appearance, size and quality. We are very much appreciative of this friendly mention and, together with a return of the compliment, we wish our worthy contemporary many more years of success and prosperity.

Mr. Ben J. Blincoe, formerly of Bardstown, Ky., is now located at Dayton, Ohio. Bird-men of "The Blueglass State" are hoping that their loss will not be a permanent one.

Dr. Wilfred H. Osgood, Curator of the Department of Zoölogy of the Field Museum of Natural History at Chicago, has recently reorganized and augmented the staff of that department. The division of ornithology includes Dr. C. E. Hellmayr, Associate Curator; Mr. John T. Zimmer, Assistant Curator; Mr. Colin C. Sanborn, Assistant. Mr. Boardman Conover is a volunteer associate, and Mr. R. Magoon Barnes, whose fine oölogical collections will be deposited in the museum, has been appointed Curator of the division of Birds Eggs.

Dr. W. S. Strode, formerly of Lewiston, Ill., and one of the "old school" bird men, has taken up residence in California at Hollywood. According to The Oölogist, Dr. Strode has "struck oil," and it may be presumed that henceforth he will be able to indulge in his several hobbies to the fullest.

One of the recent rare accessions to the New York Zoölogical Park is a Duck-billed Platypus, the rare egg-laying Australian mammal which is usually spoken of as half bird, half beast. It is twenty inches in length

and, in spite of its 9,000-mile journey, at last reports is getting along nicely. This is said to be the first living specimen brought to this country in satisfactory condition.

The asphalt lakes of Rancho la Brea and at McKittrick, California, are continuing to yield splendidly preserved skeletons of the early birds of that area. It is apparent that the birds were entrapped and became submerged while the lakes were newly formed by the escape of crude oil. As the volatile oils evaporated the mass gradually became asphalt and the bird remains were thus perfectly protected. Recent articles in The Condor by Dr. Loye Miller give much interesting detail, including the fact that many of the remains are of birds of prey and vultures. It is not difficult to conjecture how such birds become trapped in the oil while trying to make a meal off some luckless victim which had preceded them.

Hon. R. M. Barnes was a visitor to Middle Tennessee during the last week in June, returning by way of Nashville. A day afield had been planned by himself and the writer, but an almost unparalleled sequence of unlcky incidents, involved by a cross-country auto trip, prevented him from arriving with more than just enough time to catch his home-bound train.

The third Asiatic expedition of the American Museum of Natural History has just completed the first of five years of investigations in central Asia, with most interesting results. The known presence of fossil remains in the Rocky Mountains similar to those of western Europe had led to the logical theory that they must have come from some point of distribution midway between. This theory is apparently being borne out, since the expedition is finding the same fossil remains in the Gobi region of Mongolia. Remains of the largest known prehistoric land mammal are included among the finds. Asia has been spoken of as the cradle of the human race, and new interest is awakened in the thought that here may be discovered the forbears of all our early birds and mammals, including too, perhaps, some real "missing links."

The Chicago Ornithological Society has met regularly during the past year and has accomplished some very credible results. Perusal of a list of papers presented show that its members have been afield dilligently and have given their fellow members the results of their observations.

A new work on the birds of Massachusetts is in preparation, according to an announcement made by the author, Mr. E. H. Forbush, Director of the Division of Ornithology of that state. The illustrations for the two volumes propsed are to be in color and will be from the brush of Mr. L. A. Fuertes. The publication has been well provided for by the state and the cost to purchasers will be nominal. The ability of its author assures its excellence.

The Alaskan legislature pays a bounty of fifty cents each on all eagles killed. It is claimed that they kill many kinds of mountain goat and sheep as well as other game.

A national movement has been set afoot to commemorate on February 3, 1923, the one hundredth anniversary of the birth of Spencer Fullerton Baird, one of our pioneer ornithologists, whose death occurred in

1887. It has often been said that Professor Baird did more to harmonize and coördinate the work of the ornithologists of his time than any one who lived before or after him. While stationed at Washington, during the period following the Civil War, he carried on a voluminous correspondence with observers throughout the land and built up an interest which culminated in the founding of the U. S. National Museum. This work was done largely before the advent of the numerous bird journals which sprang into existence throughout the eighties and early nineties. A permanent and oppropriate memorial will be decided upon by a committee upon which The Wilson Club will be represented by Dr. Lynds Jones.

The Outdoor League of America is the name of a very comprehensive organization recently launched at St. Louis by lovers of nature interested in its conservation and perpetuation. The subject of bird reservations was among the objects outlined for its activity. Invitations had been extended to all organizations interested in the great outdoors and The Wilson Club was ably represented by Mr. Otto Wildman of St. Louis.

Messrs. Herbert L. Stoddard and George Shrosbree of the Milwaukee museum, spent the month of July on Bonaventure Island in the Gulf of St. Lawrence. They were engaged in securing material for new sea bird groups for the museum and in making motion pictures of the wealth of sea bird life to be found there.

Attention is called to the announcement on another page of the coming annual meetings of the American Ornithologists' Union and of The Wilson Club, in Chicago, during the week of October 23. It is hoped that W. O. C. members will turn out in record numbers. There will be no meeting during Christmas week as heretofore held.

FIELD NOTES

BREEDING OF THE BARN SWALLOW IN TENNESSEE

The summer range of the Barn Swallow (*Hirundo erythrogastra*) is not generally known to extend as far south as Tennessee. Various local lists from this state, as well as Louisiana, Mississippi, Alabama, Georgia, and South Carolina, fail, as far as I am able to ascertain, to mention instances of its nesting. In Arkansas, Howell's list mentions one old record of its having bred at Clinton, while in North Carolina Pearson mentions but three breeding records known for that state. In Kentucky, which lies north of and adjacent to Tennessee, I have knowledge of its being a fairly common breeder at several points.

My own observations of its breeding in this state are confined to the immediate vicinity of Nashville, where perhaps a half dozen colonies are now, or have been, in existence. The Nashville area is essentially a farming district and the extensive meadows and large barns that go with stock raising would seem to be well adapted to the requirements of this species. However, the bird must be considered as relatively scarce. Two of the four colonies now in use consist of two or three pair, another

of half a dozen, and the fourth, and perhaps the longest established, about twenty-five pairs.

The first colony of which I have record was observed here twenty years ago by my friend, Dr. Harry Vaughn. It was located in a small barn on the campus of Vanderbilt University, then in the suburbs, and consised of five or six pairs. This colony has long ago ceased to exist. In June, 1917, I noted several Barn Swallows going in and out of an old windowless dwelling which was standing in three feet of water caused by the construction of a large artificial lake. I waded to and into the building and found two nests containing young birds. On May 17, 1918, five pairs were found to be nesting here, two nests containing five nearly fresh eggs and the others held incomplete sets. This colony was seven miles south of Nashville. The following year four pairs made their nests in the building and as usual remained about the lake throughout the summer. During the ensuing winter the old house was removed and the colony was left without a home. However, two pairs were found to have taken up quarters, the next spring, in a large barn two miles further south, and it is not unlikely that they were some of the birds which had been evicted from the dwelling in the lake. This small colony was again in evidence this year.

In 1920 and 1921 two or three nests with eggs were taken from as many localities by boys and in each case the colonies were said to consist of two or three pairs. The localities were within a radius of ten miles of the city.

In July, 1922, I discovered by far the largest colony and one which has apparently been in existence for many years. It was located near Belleview, twelve miles southwest of Nashville, on an extensive stock farm comprising hundreds of acres of pasture lands, a number of barns of all sizes and ages and, most essential to the joy of the swallows, a large stock pond. This colony has been carefully protected by the operator of the farm. In one large old barn, at the pond, were five nests, constructed against the sides of the joists supporting the hay loft and twelve feet from the ground. Another and smaller barn, however, seemed to be the center of activity, and upon investigation it was found to contain about twenty nests.

The ground floor of the barn was used as a shelter and feeding place for cattle, the end being open, and overhead was a hay loft. All of the nests were built on the "bridging," used to stiffen the joists supporting the hay floor, and were within from seven to eight and a half feet of the dirt floor. When I entered the barn it was full of cattle which had sought refuge from the midday sun, and the swallows flew in and out, within a few inches of their backs, apparently unconcerned at their presence. From most of the nests the young had already been fledged, though four still held young, and two held eggs. The latter were five and three respectively and incubation appeared to be advanced. Outside some fifty or sixty swallows skimmed the pasture, but were thickest near the shed where flies were thick. They appeared entirely fearless of my presence, constantly flying within a few feet of me.

Nashville, Tenn., Sept. 1, 1922. ALBERT F. GAINER.

A MIDNIGHT SINGING CATBIRD

A short time ago I heard, for the first time, a Catbird's midnight song. It occurred to me as being so unusual that I made a note of it.

I returned home just at midnight on this occasion, and was in the act of running my car into the garage, when the Catbird's song came to me. The bird was singing in some trees not far away and, although it had rained a little earlier in the evening, the moon was shining at the time. It seemed to me that it sang with all the enthusiasm that characterizes its daylight repertoire, but of that I could not be entirely certain. The notes were interspersed with the usual *mews* of the Catbird.

FRED J. PIERCE.

Winthrop, Iowa, June 6, 1922.

A GOLDFINCH'S PRICKLY HOME

In going through my 1920 notes I find the following paragraph, on the Goldfinch's nesting, which may be of interest to readers of the Wilson Bulletin:

"While cutting a patch of bull thistles in the latter part of August I discovered a Goldfinch's nest in one of the largest ones. The nest was placed in a crotch formed by the prickly branches and contained five eggs. Though an unsightly object, to say the least, the big thistle was allowed to stand, and a watch was kept of the nest. Three eggs hatched August 27 and the remaining two August 28. The thistle probably provided a good place in which to build a nest, but as a safe home it was almost a failure. On windy days the young were tossed about in much the same manner as the crew of a rowboat would be on the ocean. On several extremely windy days there was constant danger of the youthful mariners all being thrown out of their pitching ship, and to relieve my own mind, as well as theirs, I firmly anchored the thistle to the ground with a cord. Three young left the nest September 11 and the other two left it the following day. This seemed to me a rather late nesting date for the Goldfinch."

FERD J. PIERCE.

Winthrop, Iowa.

[In 1899 I found a nest of Goldfinches in a patch of bull thistles on September 4, near Grinnell, Iowa. This nest contained four fresh eggs on that date. In twelve days the eggs were hatched, and after two weeks in the nest the young were strong enough to leave the nest and its vicinity.—ED.]

A MID-APRIL BLIZZARD AND ITS EFFECT ON BIRD-LIFE

Unseasonable snowstorms probably cause more discomfort to bird-life than any other element our migrating birds are forced to face. The birds' sense of migration tells them when their northern homes are ready for them and they hasten there, but occasionally the weather man plays a contemptible trick by changing the order of things, and the birds have to suffer.

This was what happened in this part of Iowa in mid-April, 1921. It rained all day April 15, and that evening, with much hard thunder and

lightning as a curtain-raiser, it commenced snowing, and continued through the night; all the next day we were in the grip of an old-fashioned Iowa blizzard. It was worse than any storm we had received during the preceding winter. With snow nearly a foot deep on the level, drifts three to six feet deep a common occurrence, and in the blinding snow as well (which was very wet), the birds were in a poor position to secure food.

Early on the morning of the blizzard, April 16, a number of Prairie Horned Larks, with a few Vesper Sparrows and Slate-colored Juncos, came about our farm buildings in their apparently unsuccessful search for food. I gathered up several shovels of hayseed from the barn floor and scattered it upon the nearby snow. They began working on it at once and could hardly be driven away from it. Of course, it was soon buried by the snow, but by replenishing the supply frequently, they had food most of the day.

That afternoon I made a survey of a nearby wood to ascertain to what extent the blizzard was affecting bird-life. Robins were humped up in the trees and bushes. A Black-crowned Night Heron, snow-bound, sat dejectedly in a tall tree. I saw a Vesper Sparrow with a large chunk of snow stuck to its tail, which by its weight rendered that member practically useless. My greatest surprise came when I found a number of Myrtle Warblers. During the period that I have kept migration records I have never known them to appear before the latter part of April, but the advanced spring doubtless accounted for their early arrival. Though their plumage was wet and ruffled, they twittered cheerfully as they searched for food among the fascicles of fresh tamarack leaves, quite unmindful of the snow that fell heavily all around them. Kinglets worked by their side.

That night Robins, Phœbes, and Vesper Sparrows came in through the open doors of the log-house and wood-house to seek protection for the night.

The next day, Sunday, April 17, dawned bright and fair and in a short time the sun had restored the snow-covered world to a more cheerful state. The green earth eventually appeared and the birds went about their duties with their accustomed vigor, apparently none the worse for their brief exposure to one of Iowa's extremely rare mid-April blizzards.

FERD J. PIERCE.

Winthrop, Iowa, April 18, 1921.

WILSON THRUSH IN ASHTABULA COUNTY, OHIO

On May 7 of the present year I saw the first Wilson Thrush noted for the season. On May 21 I wandered further than usual and entered a thick swampy underbrush, in the township of Plymouth, Ashtabula County, Ohio.

The day was fine. I became tired with my long walk and sat down to rest on an old log near a small pond of water. An abundance of birds were to be seen. Presently the stillness was broken by the sweetest bird music I have ever heard. It was a Wilson Thrush perched on a mossy

stump in plain sight. Presently two others joined in. It was a time to be long remembered. On June 25 I again visited the place and heard the Wood Thrush sing. Back some distance in the marsh in the fork of a small tree I found a nest containing three young birds, nearly ready to fly.

I picked one up to look at when it set up a great cry. To my surprise two adult Wilson Thrushes, in great excitement, rushed to the rescue. Since June 25 I have visited the place several times and always found some of the thrushes about. This is the first time I have found this bird nesting in Ohio.

The finding of the nest of this thrush makes me 103 species for this county.

S. V. WHARRAM.

[This thrush nests regularly, but in small numbers, in the vicinity of Oberlin, Lorain County, Ohio.—ED.]

COMMUNICATIONS

Taunton, Mass., Sept. 13, 1922.

TO THE EDITOR OF THE WILSON BULLETIN:

Realizing that no one man can know all there is to know about all the birds and that the completeness of the Life Histories of North American Birds depends on the coöperation which the author receives from others, I wish to make this report of progress and appeal to your readers for contributions, trusting that you will find the space to publish it at an early date.

Two volumes have been published and the third, containing the Petrels and Pelicans and their Allies, is printed and should soon be out. The manuscript for the fourth volume, containing the Ducks, up to and including the Ring-necked Duck, is now in Washington in finished form and ready for publication. It is not too late to add to this, when I correct the galley proof, any notes of importance on habits or distribution and not too late to substitute any particularly fine photographs for those that I have already selected.

I am now at work on the fifth volume, which will contain the remainder of the Ducks and the Geese and Swans. I expect to finish this during the winter and send it to the publishers in the spring. The life histories are practically all written, subject to revision, but the photographs have not been selected.

I have no notes on the courtship of the American and White-winged Scoters or of any of the Geese, except the Canada, or any of the Swans or Tree Ducks. I have no nesting photographs of Harlequin Duck, Barrow Goldeneye, any Geese except White-fronted and Canada, any Swans or any Tree Ducks. I should be glad to receive contributions of notes or photographs to fill in any of the gaps referred to above. Or I should be glad to correspond with anyone who has anything else to offer. I am, of course, well supplied with photographs illustrating nests, eggs and young of all the common species, but there are many gaps still to be filled. I am trying to read everything that is published on American birds, but I have no access to private notes, that have not been published, unless they are sent in as contributions. I shall soon begin work on the sixth volume, which will contain the Herons and Rails and their Allies. Contributions for this would be welcome at any time. Contributors will receive full credit for whatever material they send in and, if it is the material that I can use, their names will be placed on the mailing list to receive the volumes when published.

Those who have seen the earlier volumes can understand what is wanted. Hoping for some generous coöperation, I am,

Very truly yours,

A. C. BENT.

Taunton, Mass.